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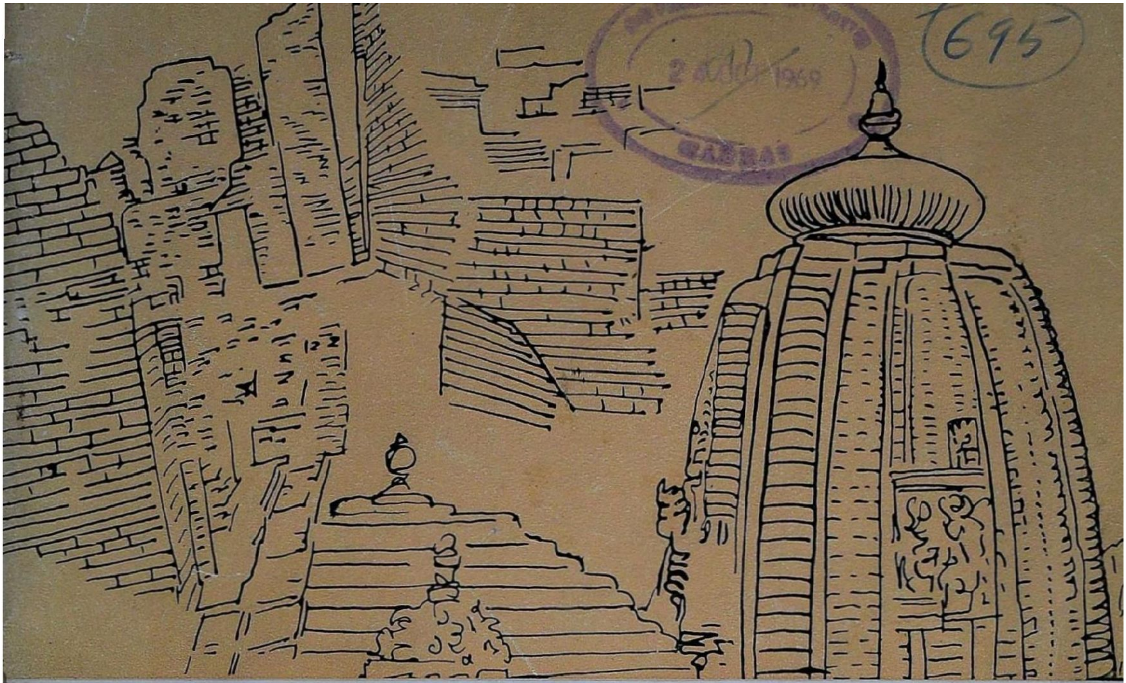

# 5000 YEARS OF INDIAN ARCHITECTURE

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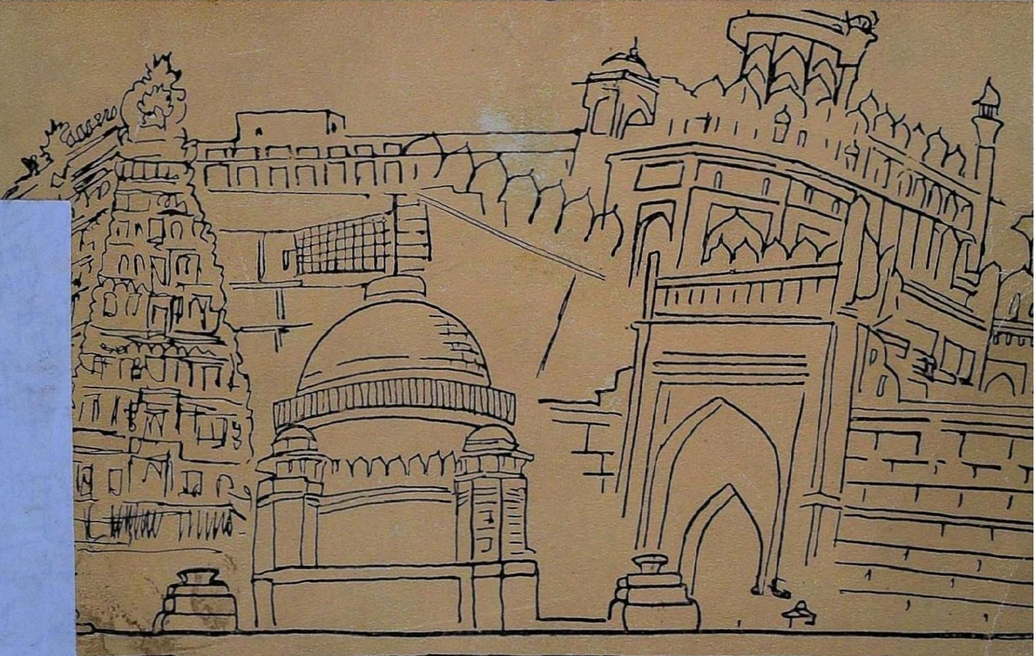

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# 5000 YEARS
## OF
# INDIAN ARCHITECTURE

PUBLICATIONS DIVISION
MINISTRY OF INFORMATION AND BROADCASTING
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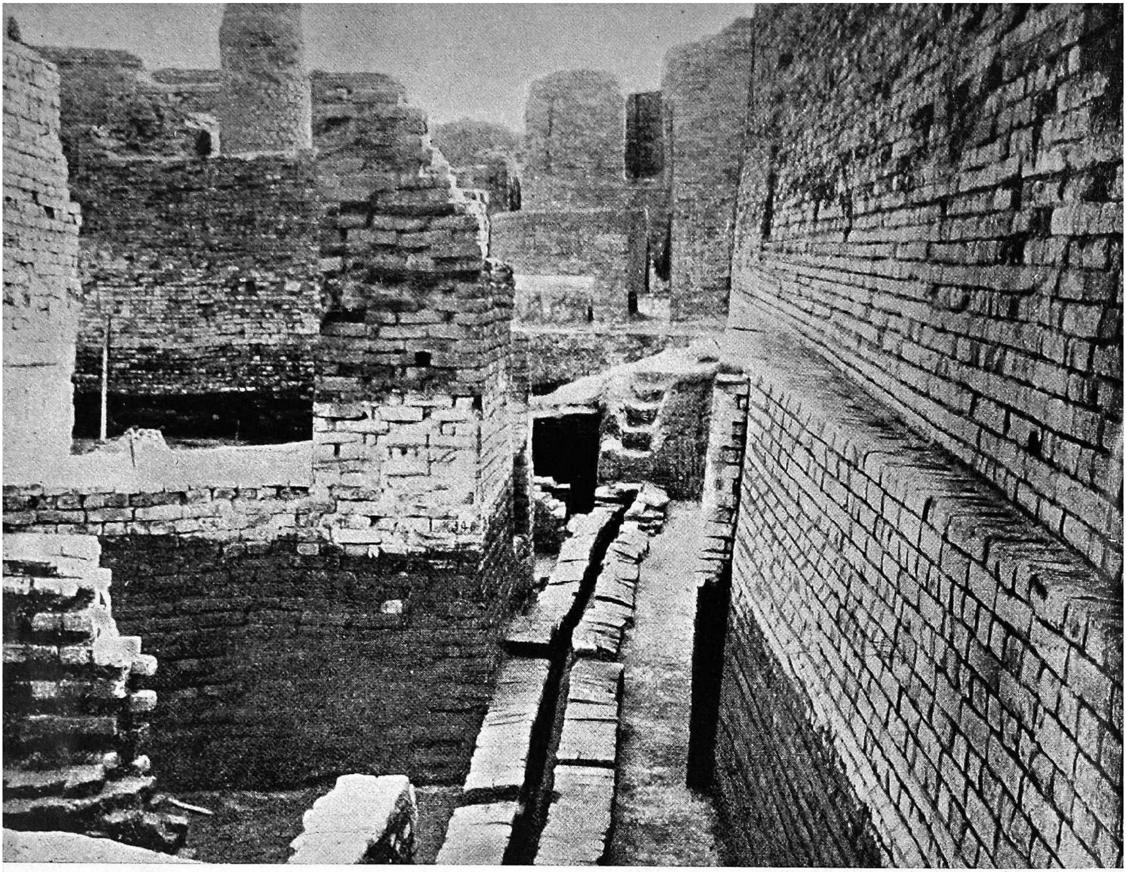
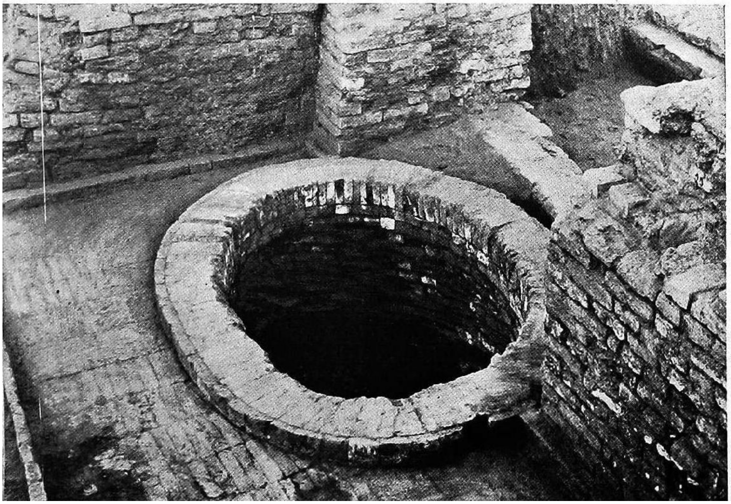


1
*Drainage system at Mohenjo-daro*



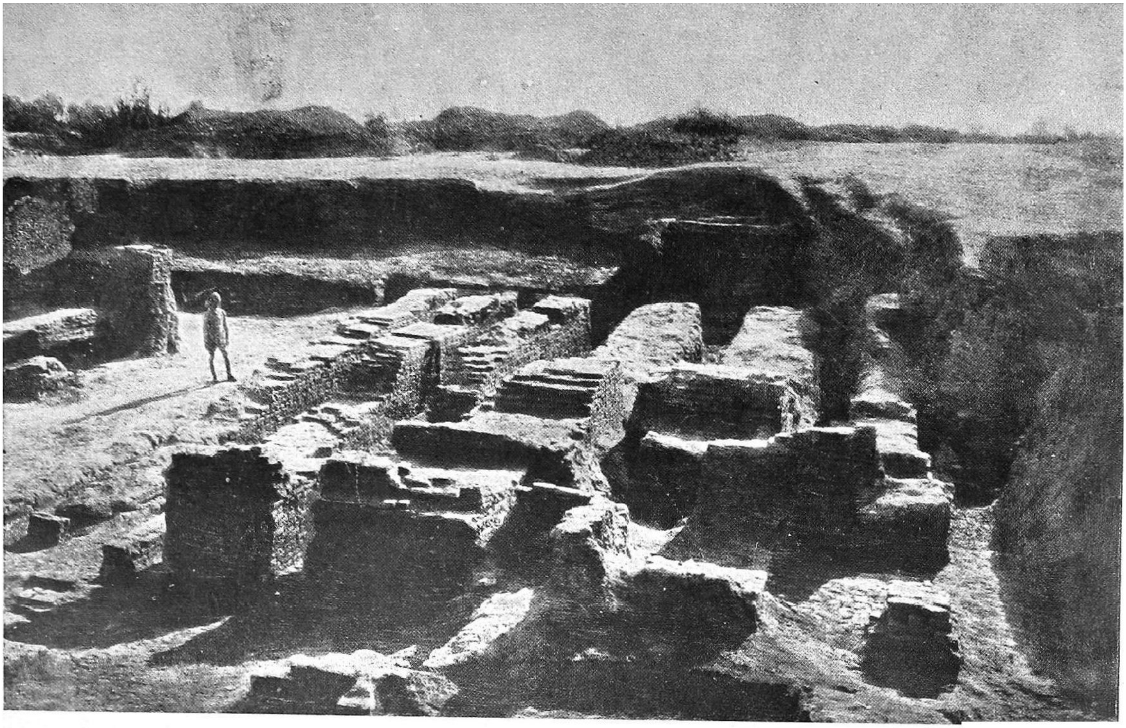
2
*A well at Mohenjo-daro*

# 5000 Years of Indian Architecture

Perhaps no branch of human culture reflects with greater exactitude the progress or decadence of man than architecture. In the progress of architecture from the most primitive types of human habitation to magnificent temples and palaces, we can discover the ceaseless effort of man to express his social and religious environment and his attitude towards life. In the development of architecture, we can also detect the aesthetic taste which actuated man to combine beauty with utility. The progress of Indian architecture from the primitive to the sophisticated was no exception to this historical process.

The earliest phase of Indian architecture may be seen from the remains of the ancient cities of the Indus Valley culture datable to c. 3000 B.C. From the excavated remains at Mohenjo-daro in Sind and Harappa in the Punjab, it is evident that the Indian cities at that early period were scientifically laid out. There were broad roads and smaller lanes with shops and booths. The houses were probably of one storey or more. The roofs were of stamped clay. Practically every house had a bathroom which was always placed on the street side of the building for the convenient disposal of water. There was adequate arrangement for drainage (Fig. 1). A brick-lined channel flowed down every street and into this main drain ran smaller tributary drains from the houses on either side. An important feature of the drainage system was the provision of large brick culverts with corbelled roofs built on the outskirts of the city to carry away storm water. The houses were also provided with brick-lined wells (Fig. 2).

At Harappa, the remains of one of



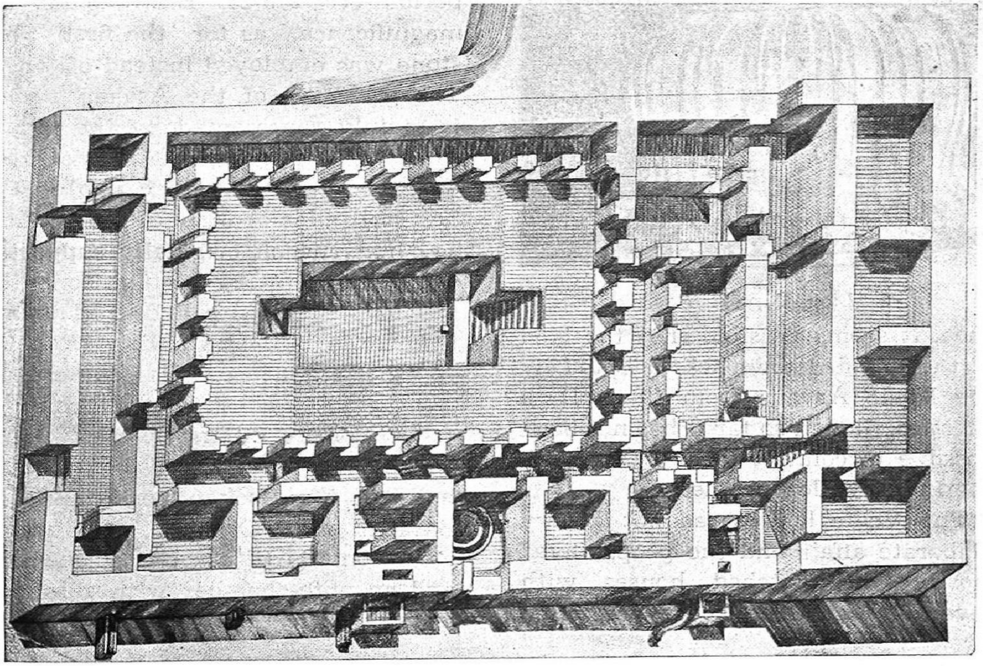
3 & 4 *Remains of a structure with 12 parallel walls, Harappa*

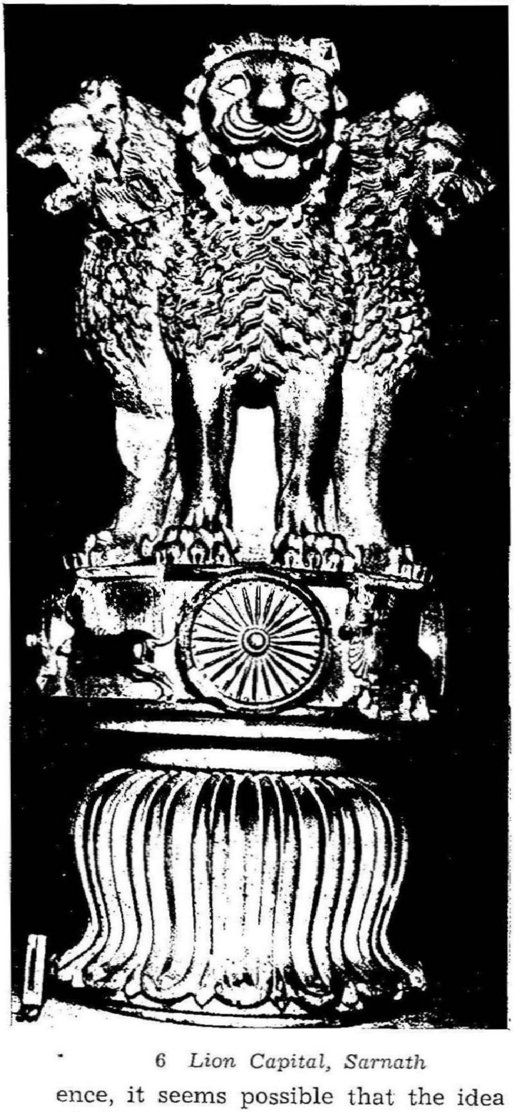
the structures has twelve parallel walls. We are unable to determine the exact significance of this structure but it might have been a gigantic storehouse (Figs. 3 & 4). At Mohenjo-daro, some buildings have cup-like depressions at street corners. These depressions probably served as receptacles for large jars.

One of the most important constructions at Mohenjo-daro is the large bath built entirely of burnt bricks which could be entered at either end by means of a staircase (Fig. 5). The broad walk at the top of the bath rested on cells filled with clay. There were walls with openings which provided access to a cloistered walk running round the bath. The eight bathrooms, to the north of the bath, were provided with stairways probably leading to an upper storey. The exact significance of this great bath and smaller baths has not yet been discovered, but it is probable that bathing was a ritual with the people of Mohenjo-daro.

The history of Indian architecture between the Indus Valley period, which came to an end some time in the 2nd millennium B.C., and the 4th century B.C. is very meagre. We have to depend entirely on literature to fill this gap. From Vedic evid-

5 *Isometric projection of the Great Bath, Mohenjo-daro*





6 *Lion Capital, Sarnath*

ence, it seems possible that the idea of the fortified town was adopted by the Vedic Aryans from their Dasa enemies, though so far it has not been possible to connect these Dasas with the Indus Valley people.

The Vedic house was not a very elaborate affair and the people lived mostly in thatched houses with several rooms. The house was often provided with a central hall and several other rooms which were used for storing and living purposes.

In the epics and Buddhist literature, references are made to well-built cities and sumptuous palaces. These cities and palaces seem to have followed the same plan as that of the city of Pataliputra which, according to Megasthenes (4th century B.C.), occupied a narrow parallelogram and was provided with stupendous palisades with loopholes for archers. There was a deep moat around it. The rampart had as many as sixty-four gates. The royal palace was a spacious building, the main part of which consisted of a series of hypostyle halls.

The architecture of the Asokan period (c. 273-237 B.C.) gains in magnificence, as for the first time stone was employed instead of wood. The great art of the Asokan period is mainly represented by the monolithic pillars on which edicts were engraved. The famous capital of the Sarnath pillar consists of four addorsed lions which originally supported the Wheel of Law resting on the abacus bearing in relief an elephant, a horse, a bull and a lion (Fig. 6). In other extant examples, the crowning member consisted of a bull or wheel. The pillars were highly polished. There are also excavated halls of the Asokan period in the Barabar hills. Of these, the Sudama cave consists of a circular chamber and an ante-chamber with side entrances. The remains of Asoka's

palace at Pataliputra show that it was planned on the model of pillared halls of the Achaemenid kings of Persepolis.

Indian architecture between 200 B.C. and 20 A.D. continued to maintain the progress made in the Asokan period. The improvement in the cave architecture may be seen in the old Vihara at Bhaja near Poona datable to the 2nd century B.C. (Fig. 7). It is remarkable for its unique reliefs, one of them being identified by Dr. Coomaraswamy as Indra riding his Airavata. Bedsa and other caves near Poona of the same period consist of a nave, apse and aisle, the apse containing a solid stupa and the aisle continuing round the apse, thus providing the circumambulation path.

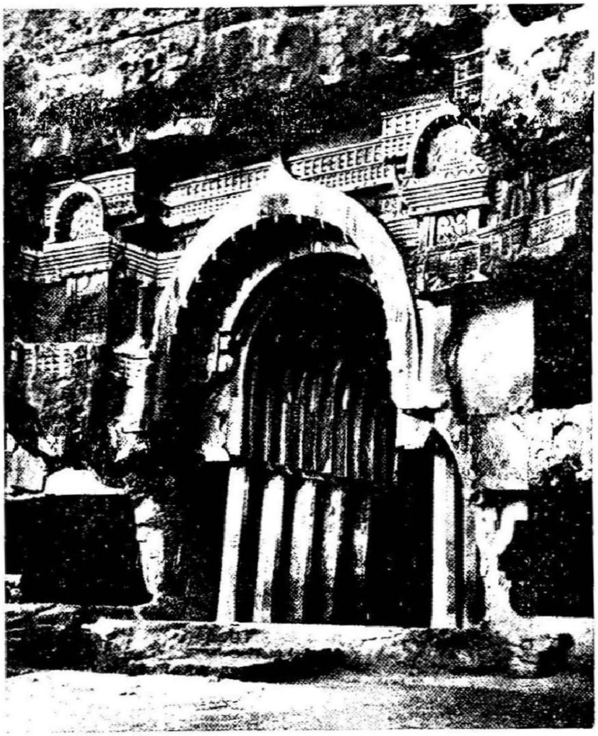
The Chaitya hall at Karle, which may be dated to the 1st cenutry B.C., is a magnificent example of cave architecture (Fig. 8). Its horseshoe windows, great pillars and finely carved reliefs win our admiration.

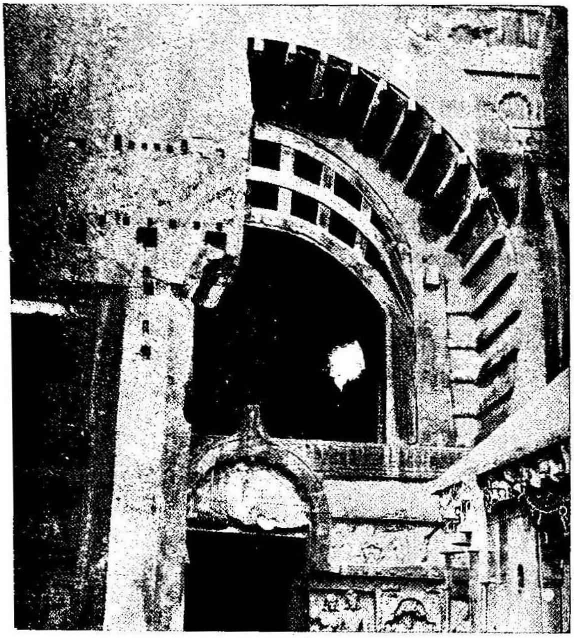
The remains of the railings and gateways of the Bharhut stupa may be dated back to c. 150 B.C. The railing pillars and the gateways are decorated with the figures of the guardian Yakshas and Yakshis, Nagarajas, birth-stories of the Buddha called Jatakas, floral, animal and other motifs (Fig. 9). The Buddha himself does not appear and the chief events in his life are represented by symbols.

There was a special type of temple connected with the Bodhi-tree at Gaya. On the strength of certain reliefs ranging from the 2nd century B.C. to the 2nd century A.D., it could be said that this temple was made of a gallery with vaulted roof and Chaitya windows of the usual type supported by pillars and with the ground plan like a Maltese cross.

The Sanchi stupas are of different periods. The core of the stupa No. 1 was probably built in the Mauryan age. The stupas Nos. 2 and 3 are of Sungan origin and the gateways of Nos. 1 and 3 belong to the Satavahana period (72-25 B.C.). The reliefs

7 *Cave Temple at Bhaja*



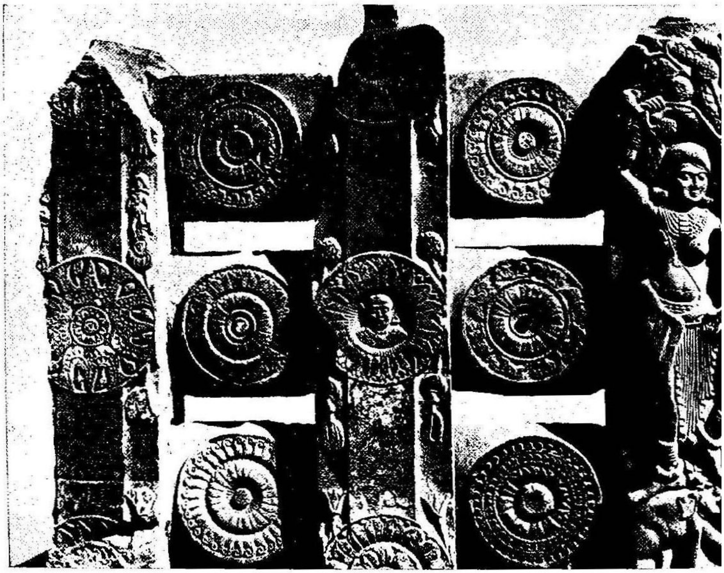


8
*Facade of the Chaitya Hall, Karle*

on No. 2 are related to the Bharhut style, but there are some reliefs which exhibit greater knowledge of spatial relation which is attributed to the hypothetical influence of Bactrian Hellenistic art, but its more natural explanation would be the stylistic advance of Indian art.

The reliefs of the Great Gateway (Figs. 10 & 11) are marvels of decorative story-telling. The principal themes are drawn from the life of the Buddha and from the Jatakas. The bigger compositions were attempted on torana architraves.

The excavations at Taxila and elsewhere have provided us with material relating to the development of architecture between 78 and 302 A.D. The architectural style in the monasteries is fundamentally Indian, but numerous motifs, for instance, the Corinthian capital, pediments, entablatures, mouldings, etc., are of debased classical order. A typical

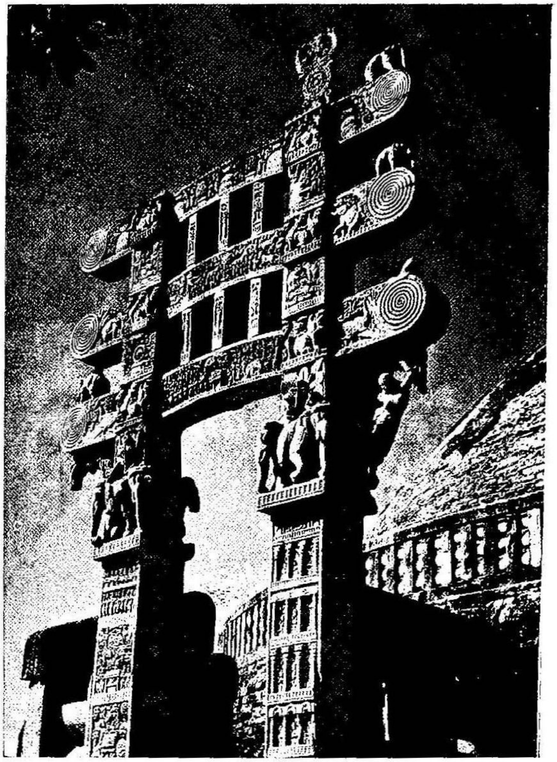


9
*Railing from Bharhut*

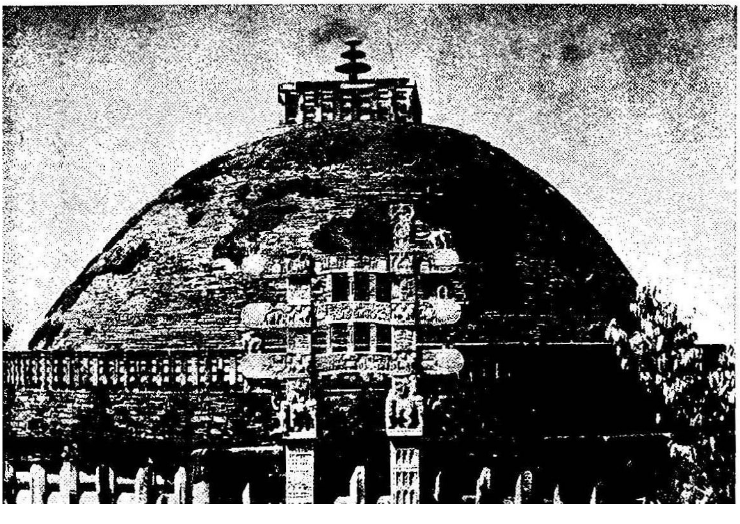
Gandharan monastery consists mainly of two structures, the stupa and the monastery with the aggregate of other buildings.

Among the great monuments of the Deccan during this period may be mentioned the Great Stupa at Amaravati which, though originally built in the 2nd century B.C., was provided with sculptured casing slabs and railings in the 1st, 2nd and 3rd centuries A.D. On the drum of the stupa were four projecting offsets facing each of the entrances and each displaying five pillars called Aryaka Khambhas. The stupa was surrounded by a rail (Fig. 12). The subject-matter of decoration are rosettes, garland-carrying erotes, Jataka stories, walled and moated cities, palace buildings, toranas, stupas, etc. The technical proficiency of the Amaravati reliefs makes them the most fascinating and expressive of the *rasa* of Indian sculpture.

There is little doubt that Indian architecture and sculpture attained

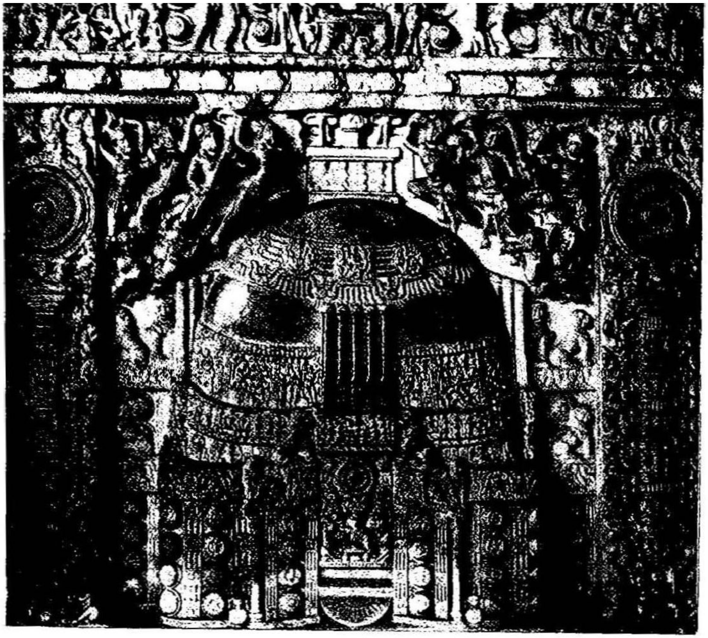


10
*Gateway, Sanchi*

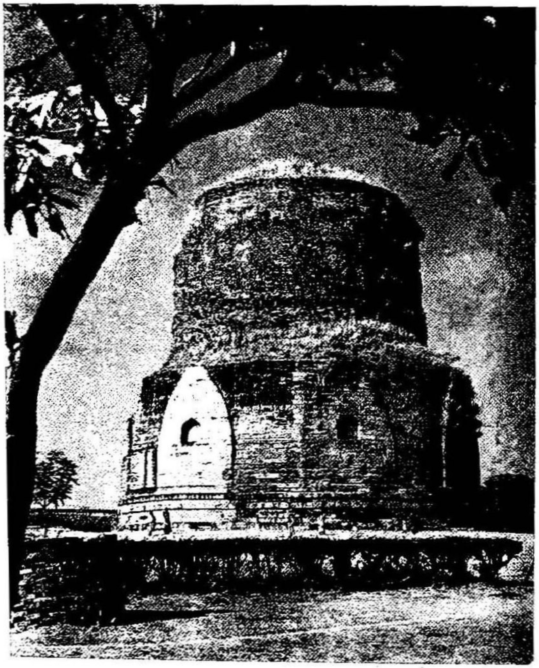


11
*The Great Stupa, Sanchi*

12
*Chaitya slab showing in miniature the stupa at Amaravati*



13
*The Dhamekh Stupa, Sarnath*

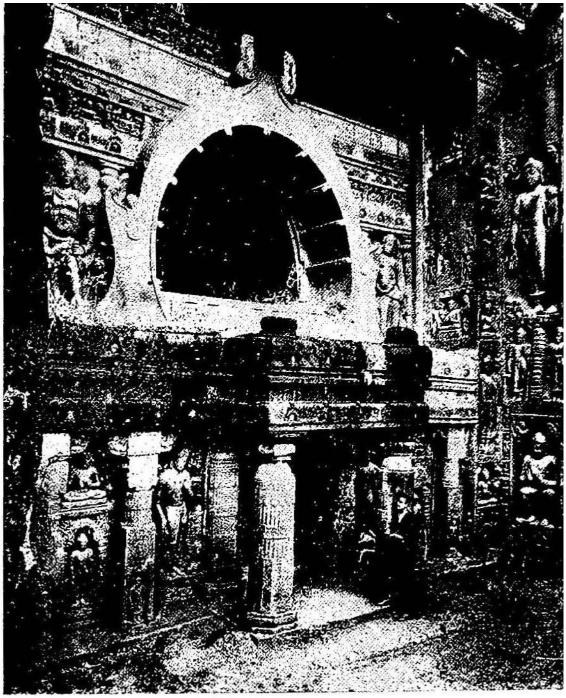


their zenith in the Gupta period (320-650 A.D.) and are best represented in temple architecture, of which a few examples are given here.

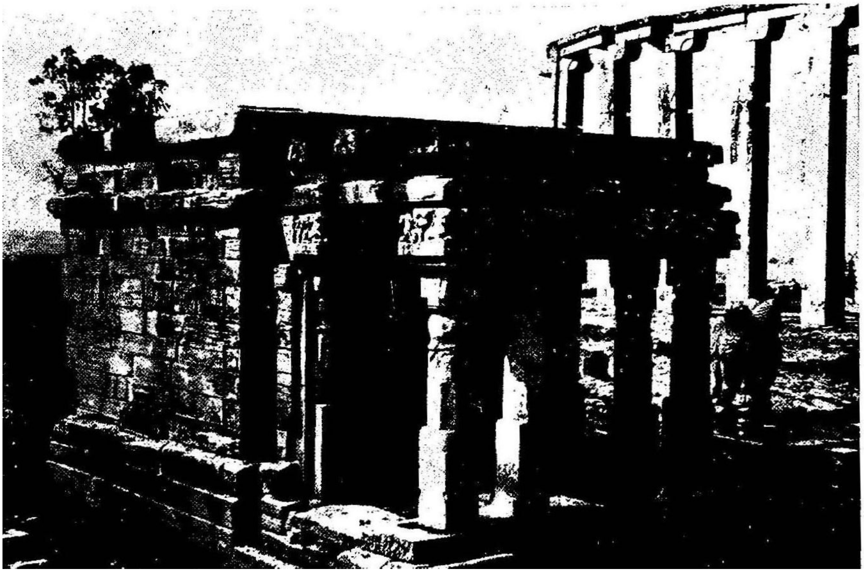
The famous Dhamekh stupa at Sarnath near Varanasi datable to the 6th century A.D. is characterised by exquisitely carved ornaments, geometrical and floral (Fig. 13). The Ajanta monolithic Caves Nos. XVI, XVII and XIX are distinguished for the beauty of their pillars and their facade decorations. The Chaitya windows with their double row of cornices in Cave No. XIX at once

attract our attention (Fig. 14). A good example of the apsidal temples of the Gupta period is the one at Ter. Among flat-roofed shrines, a prominent place must be given to the flat-roofed temples at Sanchi (Fig. 15) and Bhumara. The Siva temple at Bhumara consists of a flat roof and decorated windows. It was provided with a variety of richly carved sculptures. The famous Mahabodhi temple at Bodh Gaya, in spite of its restoration, probably maintains its form of the early Gupta period. It consists of a high straight-edged pyramidal tower of nine storeys (Fig. 16).

Examples of Indian palace architecture in the Gupta period have not survived. On the strength of contemporary paintings, however, it could be said that the Gupta palace consisted of one or two storeys and was provided with pillared halls with a flat or pointed roof decorated with



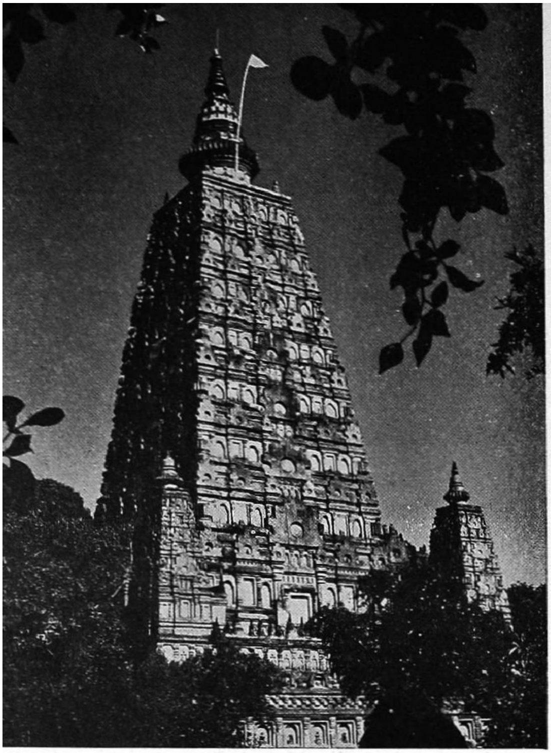
14
*Facade of Cave XIX, Ajanta*



15
*A flat-roofed Gupta temple, Sanchi*

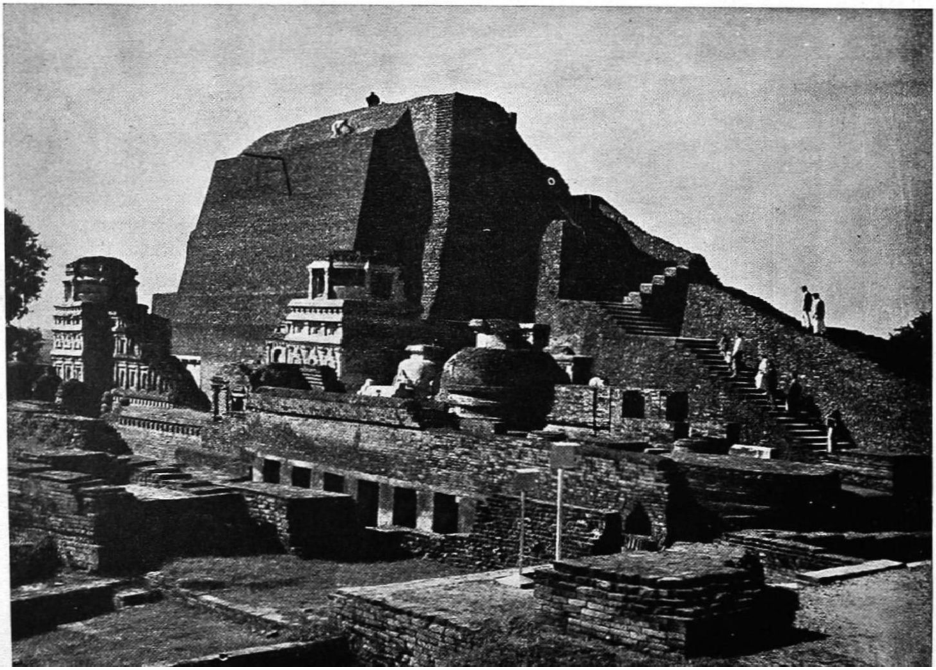
paintings and reliefs. It was also provided with a concert hall and a picture gallery.

After the Guptas, in the early mediaeval times (650-900 A.D.), substantial contribution was made to Indian architecture by the Chalukyas, Rashtrakutas and Pallavas in the Deccan and the Palas in northern India. The famous Buddhist University of Nalanda was at its zenith in the 7th century A.D. This University was surrounded by brick walls and a gate opened into the great hall of the college from which the other halls stood apart. There was an observatory used for planetary observations. The outer courts contained



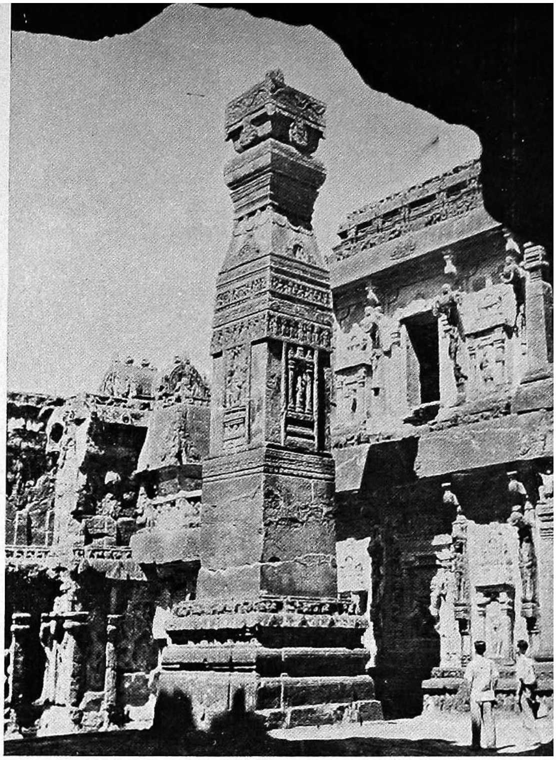
16 *The temple at Bodh Gaya*

17 *The University of Nalanda*



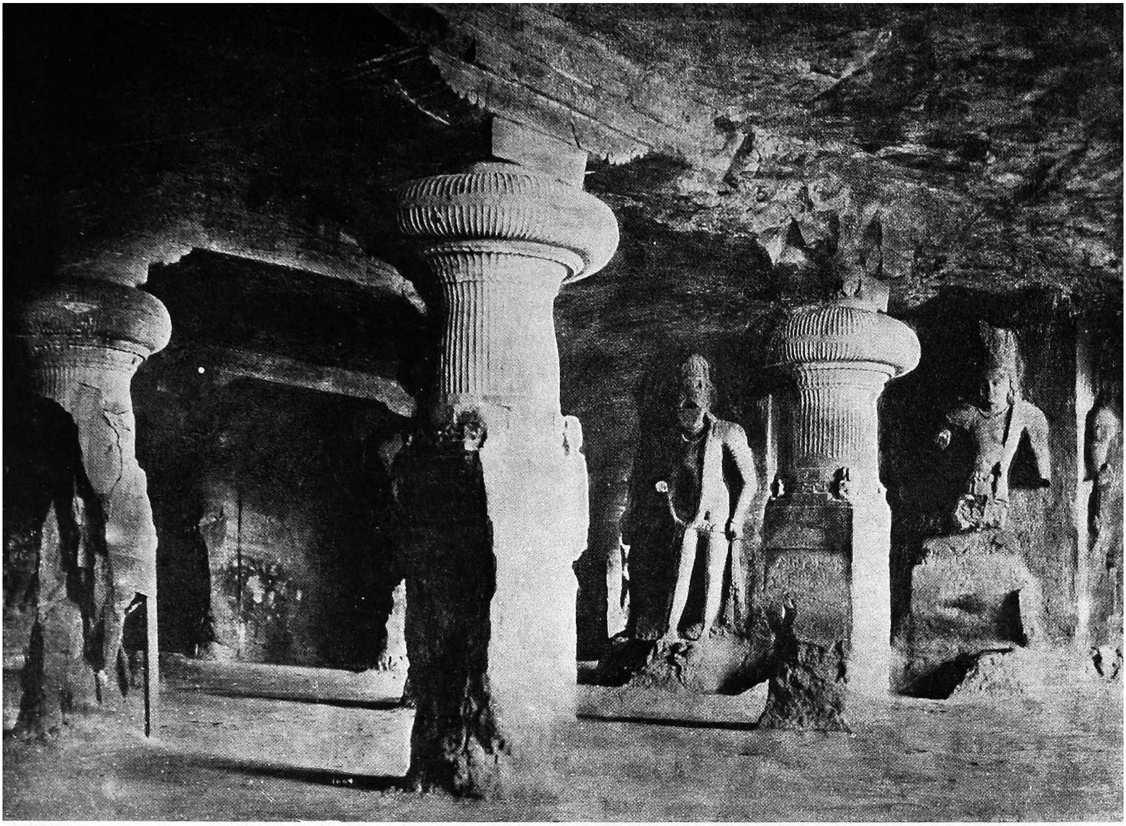
priests' chambers in four stages, each stage separated by carved and ornamented pillars (Fig. 17).

Examples of the early Chalukyan architecture datable between 550 and 746 A.D. may be studied from the famous temples at Aihole, Pattadakal and Badami. The great Virupaksha temple of Siva (c. 740 A.D.) at Pattadakal (Fig. 18) was built by one Gunda who received the title of the 'Master Architect in the Three Worlds'. The Vaishnava cave temple at Badami is distinguished for its admirable reliefs and the pillars of the verandah are decorated with magnificent carvings of figures.



19
*Kailasa Temple, Ellora*

18
*The great Virupaksha Temple, Pattadakal*



20
*Elephanta Cave*

21
*View of the Rathas at Mahabalipuram*

Among the famous monuments or temples raised by the Rashtrakutas may be mentioned the great Kailasa temple built at Ellora (Fig. 19) by Krishna II (757-783 A.D.). It is decorated with the finest sculptural composition known in India. To the same period may be dated the Siva shrine of Elephanta (Fig. 20) in the neighbourhood of Bombay, which is

not so much distinguished for its architecture as for its beautiful sculptures which include the famous Trimurti Siva.

The Pallavas were a great power in the South and on the east coast between 400 and 750 A.D. A passing reference may be made here to the five rathas at Mahabalipuram, all monoliths datable to the first half of the 7th century A.D. (Fig. 21). The characteristic details of this architecture include a capital, plain or horizontally fluted brackets, roll cornice with Chaitya window niches and makara torana lintels. The divine and human figures have been most beautifully represented. Another Pallava temple known as the Kailasanatha temple at Kanchi, datable to the 8th century A.D., is a pyramidal tower with a flat-pillared mandapa in front surrounded by continuous series of cells (Figs. 22 & 23).

The temples and monuments of the late mediaeval period (900-1300 A.D.) of Indian architecture are too numerous to be described

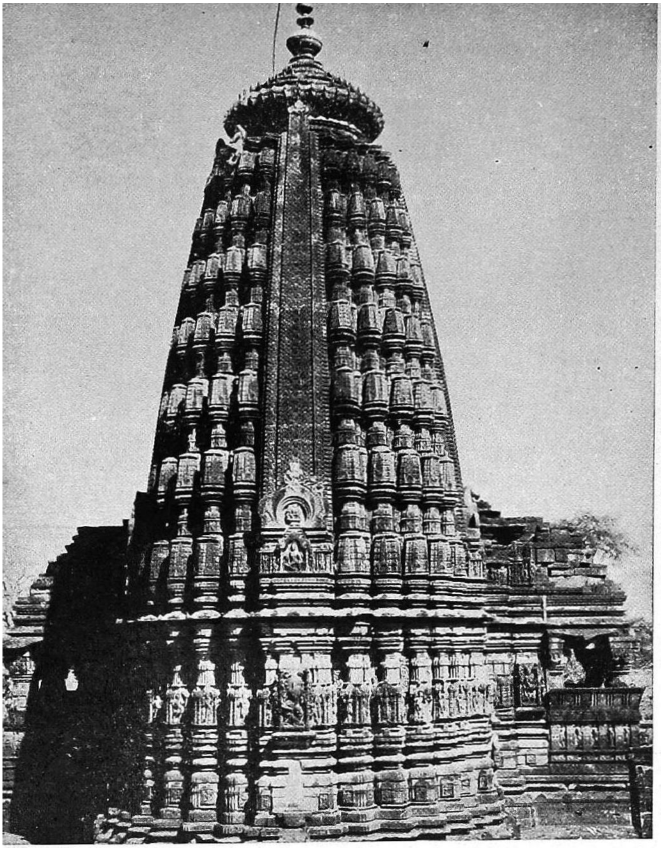
22 *Kailasanatha Temple, Kanchi*

here. Besides the old centres, new art centres were being patronised by the Palas, the Chalukyas and the Cholas, the Gangas and the Rajputs. Each centre developed its own style.

The beautiful temples at Khajuraho were erected between 950 and 1050 A.D. The effect of the height of the Kandariya Mahadeva Temple is enhanced by a deep basement and the reduplication of the tower. Floral and human sculptures add to its beauty considerably (Fig. 24).

23 *Wall of courtyard, Kailasanatha Temple, Kanchi*

24 *Kandariya Mahadeva Temple, Khajuraho*



25
*Udayesvara Temple,*
*Udaipur*

26
*Rudramal Temple,*
*Siddhapur*

In Madhya Pradesh the finest and the best preserved temple is that of Udayesvara at Udaipur built between 1059 and 1080 A.D. The sikhara is ornamented with four narrow bands running from the base to the summit (Fig. 25).

Gujarat in this period also became reputed for its beautiful and richly ornamented temples. The famous Rudramal temple at Siddhapur was built by Siddharaja (1093-1143 A.D.) (Fig. 26). Of the famous Jain temples at Mt. Abu, one built by Vimal Shah in 1032 (Fig. 27) is dedicated

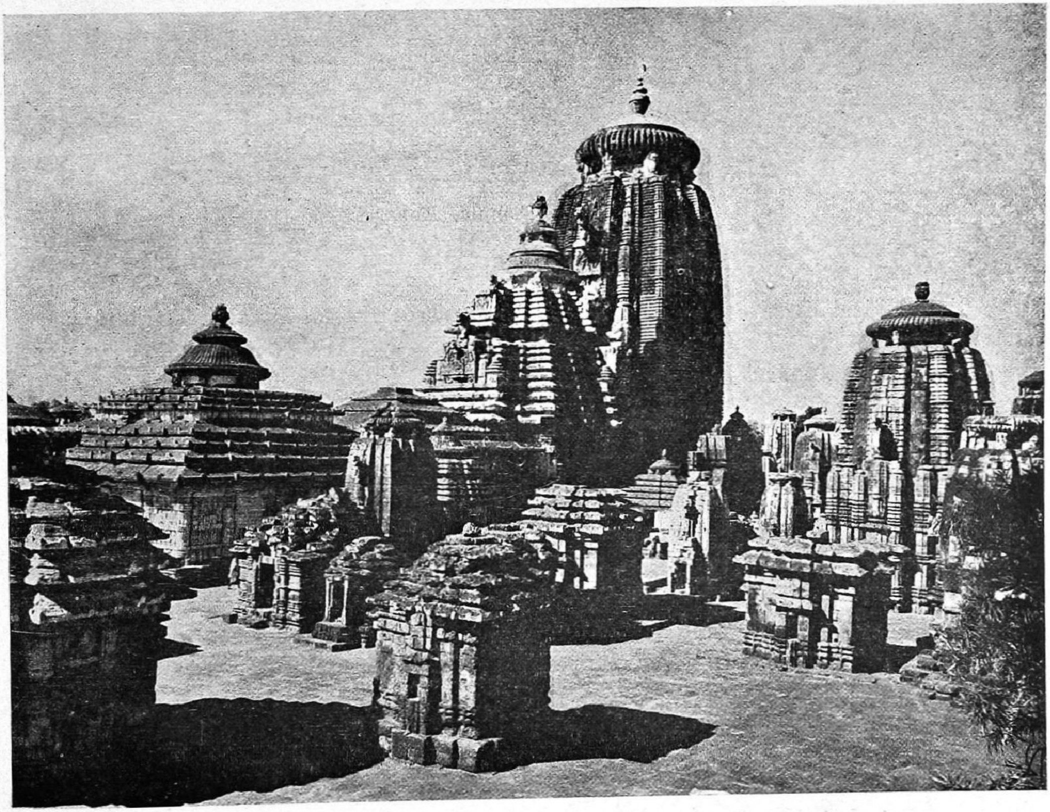
27
*Vimal Shah's Temple, Mount Abu*

28
*Ceiling of the Tejpala Temple, Mount Abu*

to Adinatha and another by Vastupala and Tejpala in 1232 (Fig. 28) to Neminatha. The temples are made of marble. As observed by Cousins, "the amount of beautiful ornamental detail spread over these temples in the minutely carved decoration of ceilings, pillars, doorways, panels and niches is simply marvellous; the crisp, thin, translucent, shell-like treatment of the marble surpasses anything seen elsewhere and some of the designs are vertiable dreams of beauty."

The Orissan temples dating from the 7th to the 13th century amply illustrate the growth of the Nagara style. The Siva shrine of Parasuramesvara has a low double-roofed mandapa with solid walls lighted by openings between the roofs. The great temple of Lingaraja (Fig. 29) looks imposing with the effect of the height of the sikhara enhanced by

29 *Lingaraja Temple, Bhubaneswar*



**30** *Surya Temple, Konarak*

the vertical lines of the strongly emphasised ribs. The beautiful Surya temple at Konarak, built between 1238 and 1264 A.D., does not differ essentially from other Orissan temples. Its most remarkable feature survives in the roof of the mandapa or jagmohan which is divided into three stages (Fig. 30). This and some other Orissan temples contain examples of beautiful sculpture of an erotic nature. These and other decorative details have won wide appreciation.

The temples of what may be termed the later Chalukyan style are widely distributed in Dharwar, Mysore (Figs. 31, 32 & 33) and the Deccan. The fully developed type has a star-shaped plan with a relatively low elevation and wide extension, characterised by the grouping of three shrines round a central hall, pyramidal towers carrying the plan of the shrine below, elaborately pierced windows and cylindrical polished pillars.

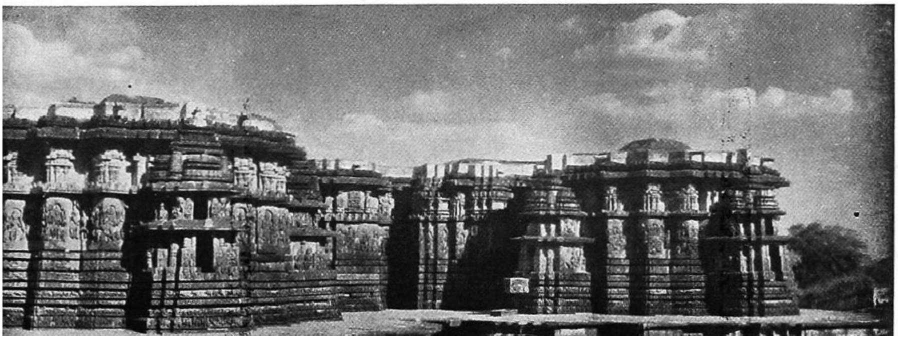
In the later mediaeval period, from the 15th century onwards, the Hindu princes built large palaces in Rajputana and Bundelkhand. The immense palace at Gwalior, partly built by Man Singh (1486-1516), is famous for its wall towers and imposing

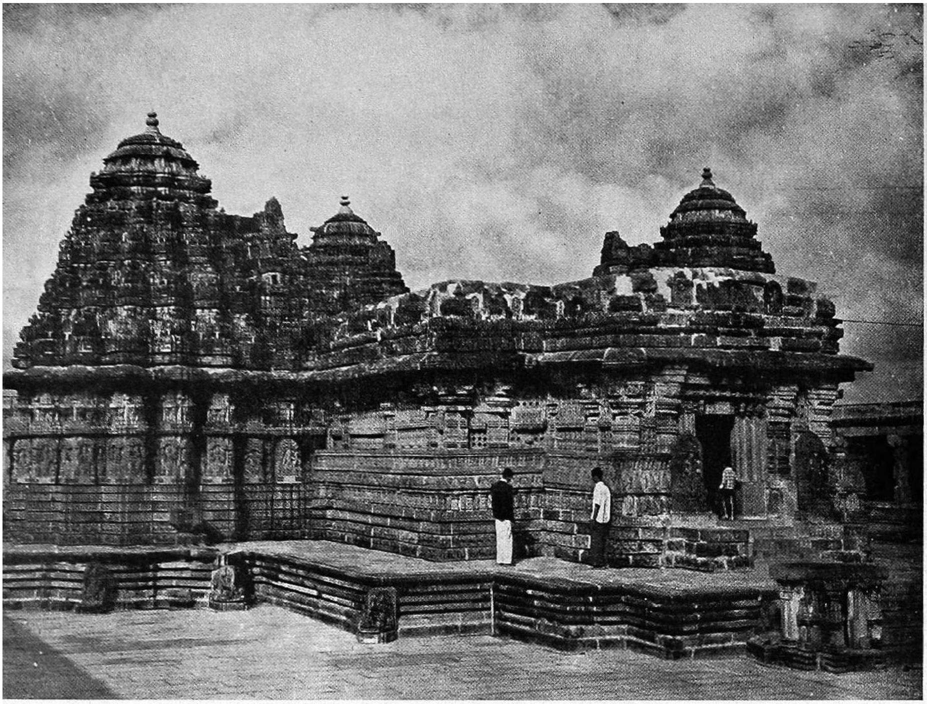
gates. The magnificent palace at Datia, built by Bir Singh in the 17th century, is the best example of Hindu architecture (Fig. 34). The palace at Amber was also built in the 17th century (Fig. 35). The Jodhpur Fort, with its tremendous bastion, and the old palace are among the best examples of Hindu architecture extant.

Reverting to the South, between 850 and 1600 A.D., temple architecture found patronage with the Cholas, the Pandyas, Vijayanagar kings and the Nayakas of Tanjore and Madurai. The great gopurams of the Pandya period are found at Srirangam, Madurai and Kumbakonam. These great towers attain such ample proportions that they dwarf the central shrine (Fig. 36). The examples of the great pillared mandapa of the Vijayanagar period are found at Kanchi, Vijayanagar, Vellore, etc. The finest of all Vijayanagar temples is the Vithoba temple completed in 1565. Its distinguishing features are the pillars and mandapas and the

31
*Carved ceiling of Chenna-Kesava Temple, Belur*

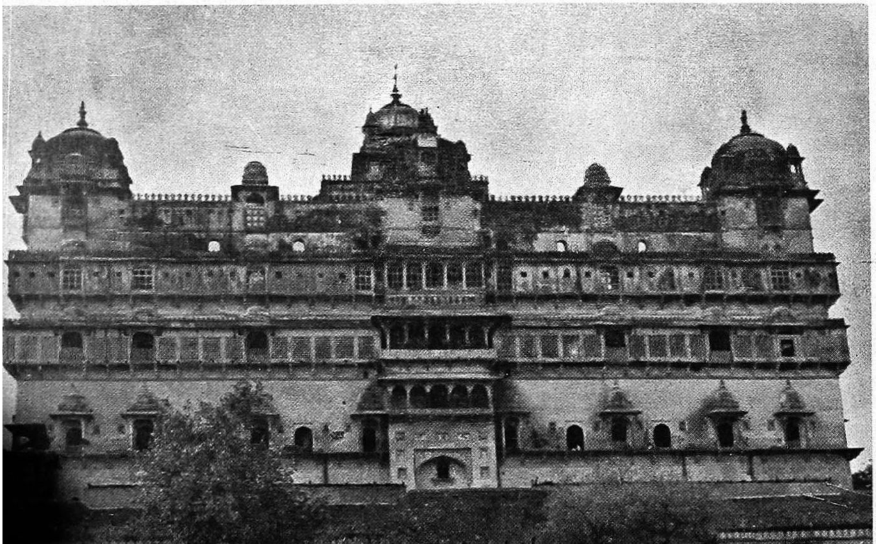
32 *Hoysalesvara Temple, Halebid*



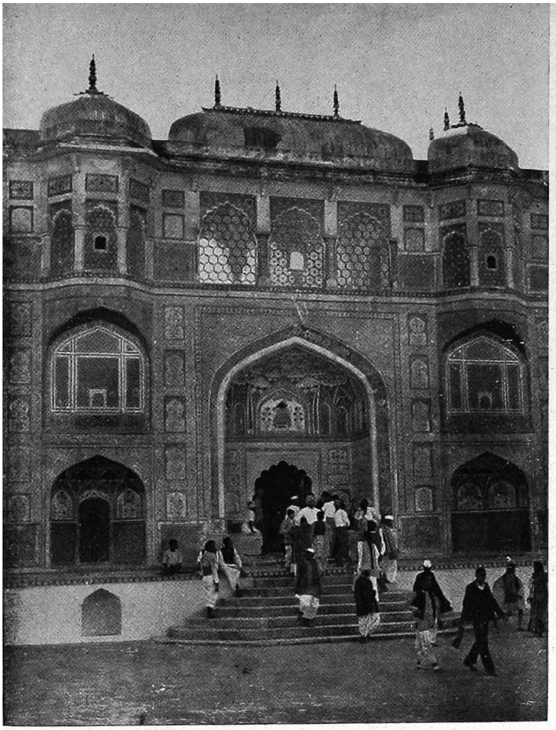


33
*Kesava Temple, Somnathpur*

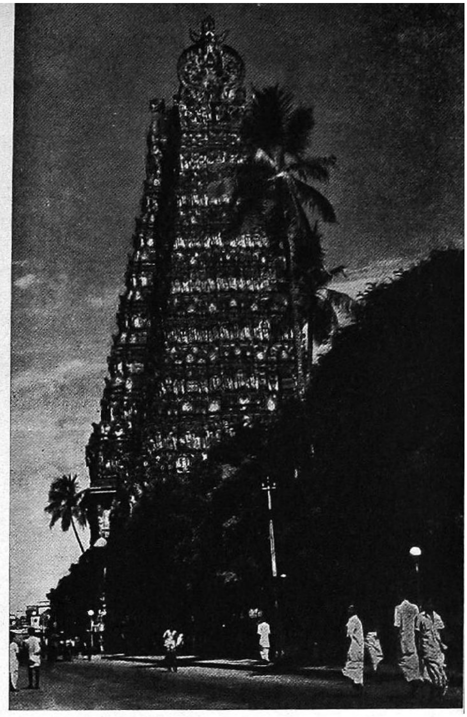
stone car carved out of stone blocks. The Nayakas of Madurai in the 17th century were also great builders. Tirumala Nayaka (1623-1659) built the Vasant Mandapa in front of the great Meenakshi temple (Fig. 37). It has a flat-roofed corridor with three aisles.



34
*Bir Singh's Palace at Datia*

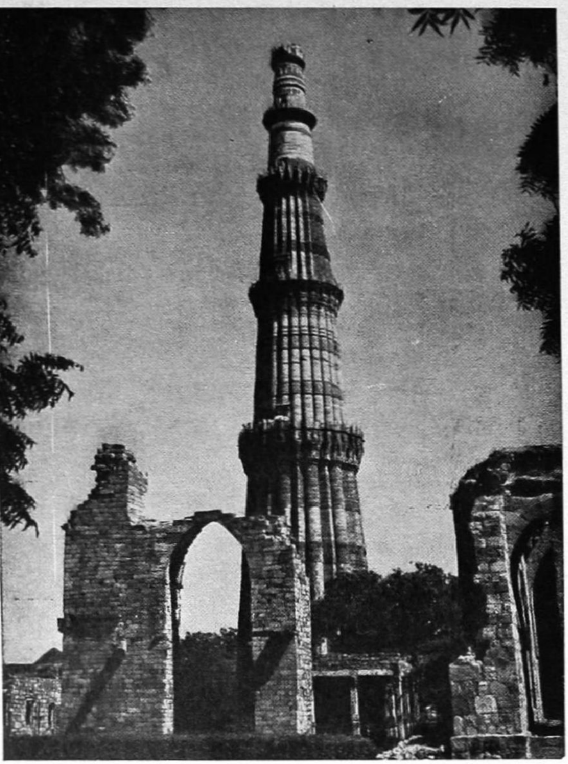


35 *The Palace at Amber*



36 *Meenakshi Temple, Madurai*

37 *Sculptured south corridor of Meenakshi Temple, Madurai*



38 *Qutb Minar, Delhi*

II

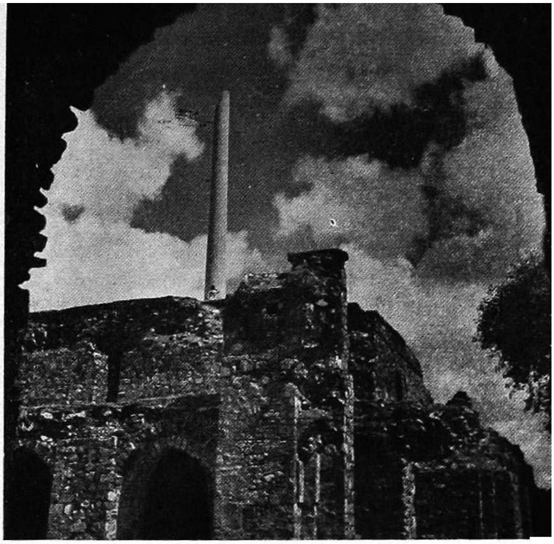
The establishment of Islamic power at the end of the 12th century in northern India brought face to face two contrasting cultures whose combined genius gave birth to what we call the Islamic art of India. It drew its inspiration from Syria, Egypt, Northern Africa and Sassanian Persia, and its architecture acquired a fundamental character of its own distinguished by standardised forms and concepts. It is equally true of Islamic architecture that it always developed local Muslim styles based primarily on indigenous ideals and stamped with a strong national individuality.

In the development of Islamic architecture in the Turkish and Afghan period (c. 1200-1550 A.D.), Delhi occupied a prominent place, as it was here that the Muhammadans first erected their splendid mosques. Qutb-ud-din Aibak erected his famous Jama Mosque in 1191. It has certain Hindu characteristics. In 1230, Iltutmish doubled this mosque and Ala-ud-din added the third court, reduplicating the prayer chamber on the north. The most significant building with the mosque is the Qutb Minar (Fig. 38), intended first as the tower from which the muezzin could summon the Faithful to prayer, but later regarded as a Tower of Victory.

From 1236 to the accession of Ala-ud-din in 1296, the history of the Sultanate architecture is blank save for the tomb of Balban (1266-86). The famous monument of the Ala-ud-din period is Alai Darwaza built in 1311 which served as a gateway leading to the Quwaat-ul-Islam mosque.

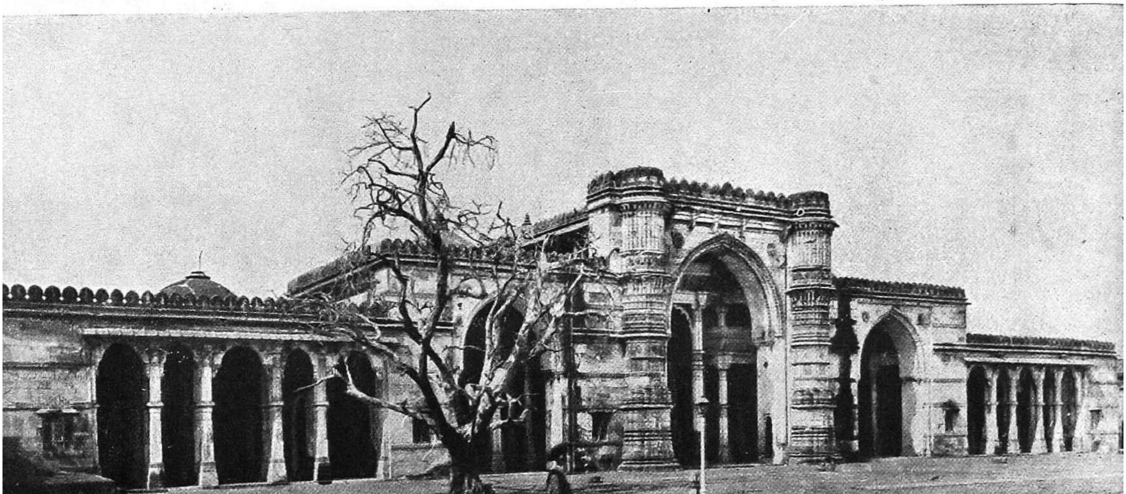
In the Tughluk period (1320-1413), the architecture of Delhi entered a new phase in which lavish display of ornament gave place to sobriety. The city of Tughlukabad, built by Ghiyas-ud-din (1321-25), is noted for its cyclopean walls, colossal bastions and lofty, narrow portals. The tomb of Ghiyas-ud-din is in the shape of

an island castle with battering walls and sturdy proportions. Firuz Shah was the greatest builder in the line of the Tughluks who built cities, forts, palaces, tombs and other buildings of public utility. Besides Jaunpur, he built at Delhi the palace fort of Firuzabad which was provided with 120 rest houses. The chief defect of the architecture of this period, however, is its monotonous repetition.



39 *Asoka Pillar at Kotla Firuz Shah, Delhi*

40 *Jama Masjid, Ahmedabad*



Of the numerous monuments of Firuz Shah at Delhi, the most noteworthy is the Kotla Firuz Shah, the palace citadel which the Emperor built within his new city of Firuzabad. Among the monuments within this citadel may be mentioned the Jama Masjid, an imposing building of two storeys. The pillar of Asoka (Fig. 39), which stood in front of the mosque, came from Topra in Ambala District; the pillar from Meerut District was set in Kushk-i-Shikar palace. Attention may also be drawn to the mausoleum of Khan-i-Jahan Tilangani, the Prime Minister of Firuz Shah who died in 1368. It is situated a little to the south of the Dargah of Nizamuddin Aulia.

There is nothing much to say about the building activity of the Sayyid and Lodi kings. The distinctive features of their architecture were the use of blue enamelled tiling to give emphasis to decorative features, the elaborate treatment of surface and the use of lotus finial on the domes.

While Muslim architecture was developing at Delhi on the lines described above, the provincial capitals had their individual architectural styles between the 13th and 15th centuries. Bengal was annexed as early as 1198-99 by Muhammad Bakhtiyar Khan. In that part of the country, brick, timber and bamboo were the principal building materials in use. The Muhammadans found certain characteristic features of the architecture of Bengal, such as the use of square brick pillars of stunted proportions, peculiar form of curvilinear roof and carved, moulded surface decoration, which they adopted.

We know little about the early Muslim architecture of Gaur and Pandua where the Muslim kings had raised religious monuments and buildings. The far-famed Adina mosque was built by Sikandar Shah (1357-89) at Pandua. It is an immense open quadrangle, more than twice as long as it is broad, bounded on all sides by arched screens and arched ways each identical in all respects to others; monotony is avoided by a single archway rising above the others. The cloisters divided into 375 bays also follow the same pattern. Another interesting monument at Pandua is the Eklakhi tomb assigned to Jalal-ud-din Muhammad Shah (c. 1414-1431). Among the interesting buildings at Gaur may be mentioned the Dakhil Darwaza built in 1459. It is a superb example of what can be achieved in brick and terracotta. The Tantipara Masjid at Gaur (c. 1470) is supposed to be the finest monument there and this opinion is justified as far as the ornamentation is concerned.

When Ala-ud-din Khilji invaded Gujarat, he found beautiful architecture flourishing there. This style was marked by breadth and spaciousness combined with elegance. The foundation of the local Muslim style of Gujarat was laid in the 14th century, but it could not fully develop till the Ahmadshahi dynasty. Ahmad

Shah built the city of Ahmedabad and erected there such famous monuments as the Jama Masjid (Fig. 40) and Tin Darwaza. The latter served as the principal entrance to the outer courtyard of the palace. This gateway is noted for its perfectly framed delicate archway.

Among the monuments of Muhammad Shah II (1442-57), the mausoleum of Sheikh Ahmad at Sarkhej is the largest of its kind in Gujarat and is distinguished for its chaste simplicity and as a pillared hall it is difficult to improve upon (Fig. 41).

The reign of Muhammad Begarha (1459-1511) is noteworthy for the magnificence of its architecture. He built the new cities of Junagadh, Kheda and Champaner. He further beautified Ahmedabad with new fortifications spacious roads and splendid edifices. Outstanding among the monuments at Champaner is the great Jama Masjid which rivals in beauty any mosque in Gujarat. At

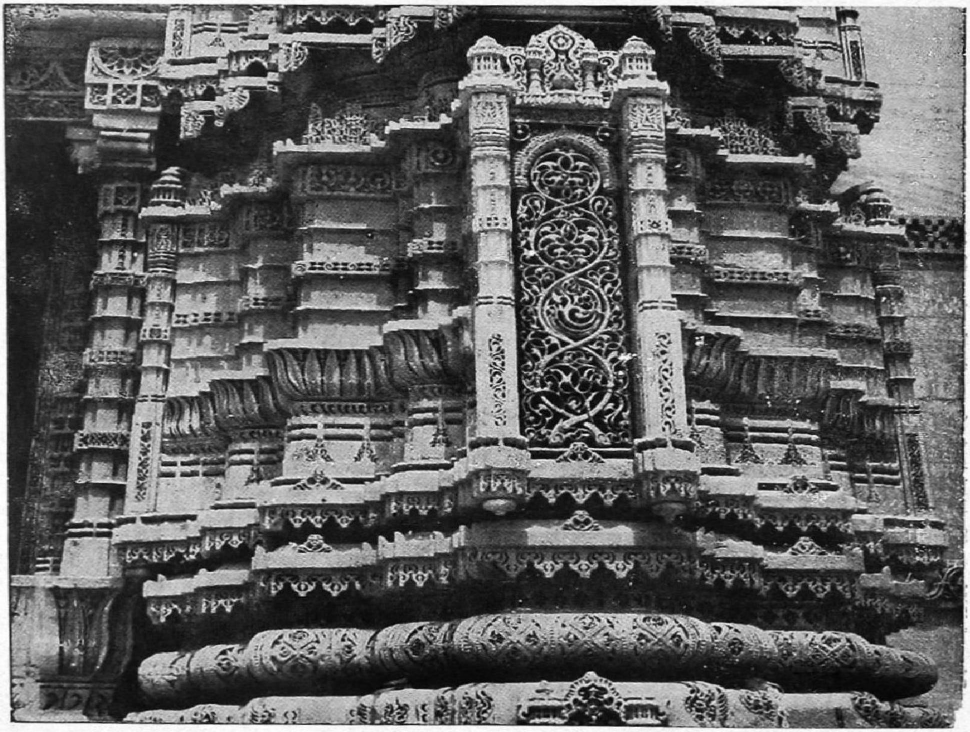
41 *Mausoleum of Sheikh Ahmad at Sarkhej, Ahmedabad*

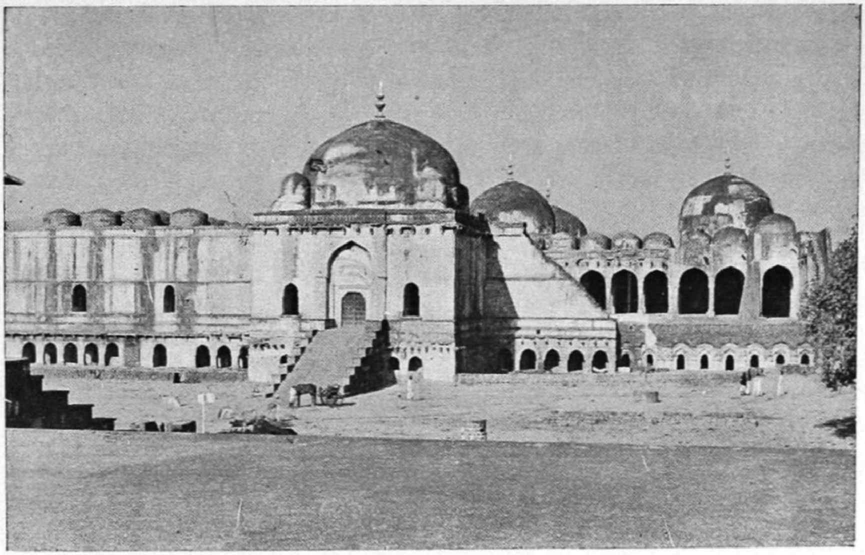
Sarkhej in Ahmedabad, the remains of his palace with its stepped ghats and terraces, its pillared verandahs and bastioned windows attract our attention. Rani Sipri's Mosque (Fig. 42), which according to Fergusson is one of the most exquisite structures in the world, is remarkable for its jewel-like carvings. The traceries may be seen in Sidi Sayyid Mosque to their perfection.

In the earlier stages of its development, the local style of Dhar and Mandu was based on the architecture of the Imperial Capital, but it was also distinguished by its impressive size and peculiarity of construction. The plan of the Hindola Mahal at Mandu is 'T' shaped, the stem of the 'T' formed by the Darbar Hall and the cross by a group of smaller apartments in two storeys intended for the Zanana. A fine example of Sultanate architecture is the Jama Masjid at Mandu (Fig. 43).

There are some beautiful monu-

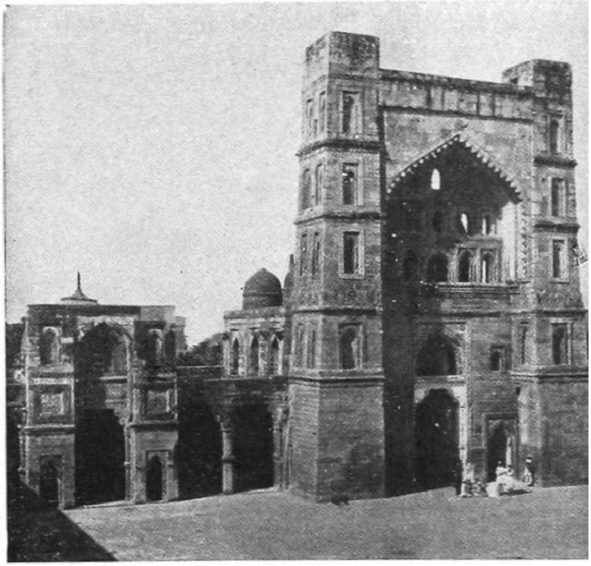
42 *Rani Sipri's Mosque, Ahmedabad*





43 *Jama Masjid, Mandu*

44 *Atala Masjid, Jaunpur*



ments at Jaunpur, not far from Varanasi, built by the Sharqi kings. The best monument in Jaunpur style is the Atala Masjid built as far back as 1378. Its architectural features are directly copied from the mosque of the Tughluk period, though it is more decorated; its gateways were designed to match the propylons (Fig. 44).

Turning from northern India to the Deccan, we find that as long as the Deccan formed part and parcel of the Delhi Empire the architecture

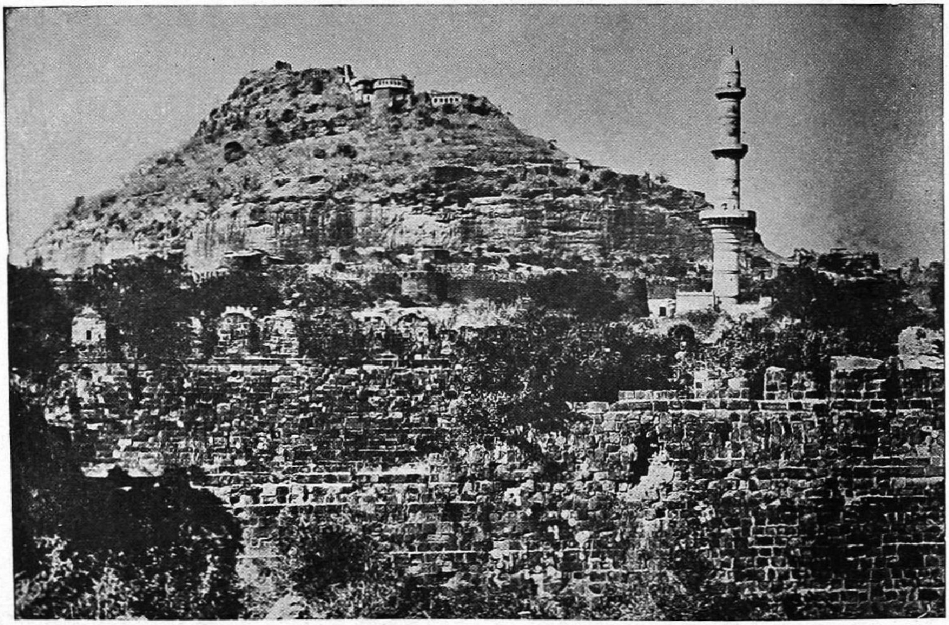
was modelled on the Tughluk or Khilji style. Even after the Deccan had re-established its independence in 1347, the Bahmanis followed the Imperial style of Delhi in which European and Persian influences are evident. Attention may be drawn to the fortress at Daulatabad (Fig. 45) built by Mohammad Tughluk in 1339.

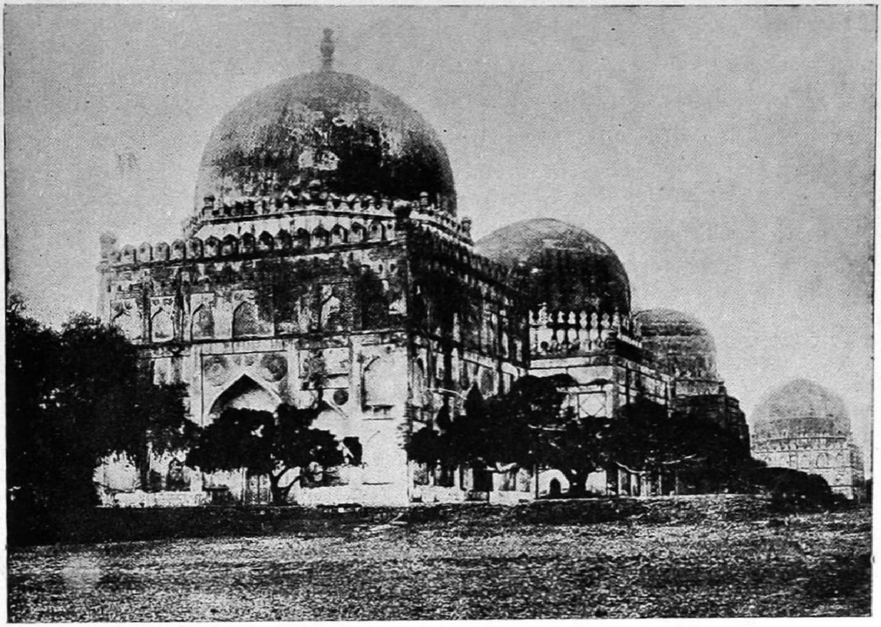
The famous Jama Masjid at Gulbarga (1367) has two special characteristics: the broad squat arches of the cloisters and the courtyard covered by small domes carried on arched bays.

Among the monuments at Bidar, the finest is the tomb of Ahmad Wali Shah, the interior of which is decorated with paintings in floral style and enriched by bands of inscription painted in gold on deep blue or vermilion ground (Fig. 46). Another notable monument is the College erected at Bidar in 1472 by Mahmud Gawan. It was a three-storeyed building containing a mosque, a library, lecture halls, professors' quarters and students' cubicals looking out on an open courtyard.

It is well known that the Mughal period has given to Indian architec-

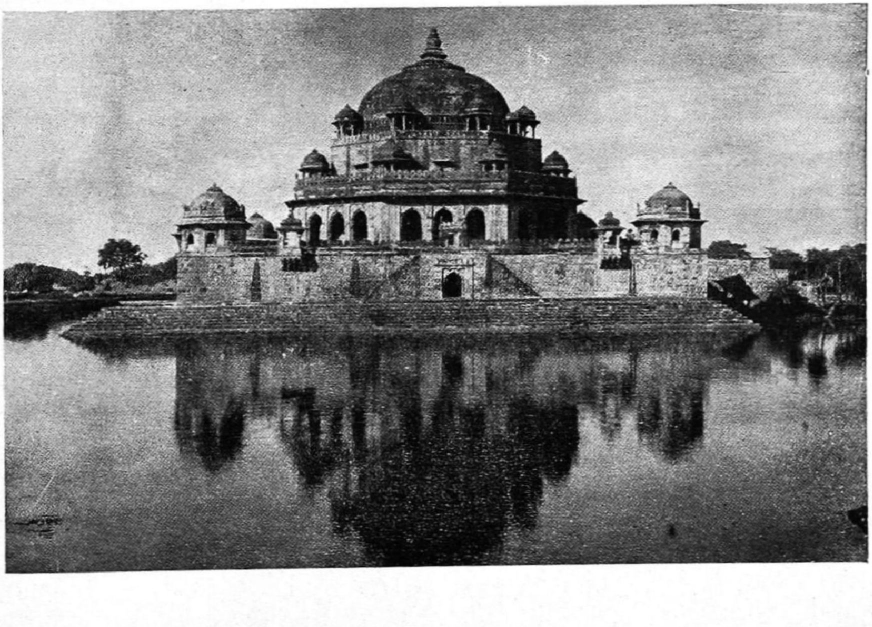
45 *Daulatabad Fort*





46 *The tomb of Ahmed Wali Shah, Bidar*

47 *Mausoleum of Sher Shah, Sasaram*

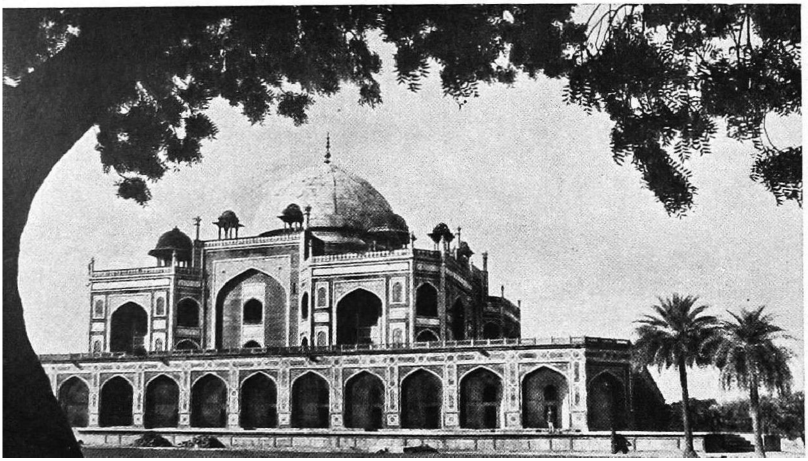


ture some of its finest gems. Though both Babar and Humayun were unable to contribute anything to the growth of Mughal architecture, it is significant that even in those days of storm and stress the Sayyid-Afghan architecture contributed some fine monuments. The famous mausoleum of Sher Shah at Sasaram is an everlasting tribute to the genius of that great ruler and the skill of its architect (Fig. 47). The tomb rises from a large rectangular tank, forming a grand pyramidal mass of diminishing tiers crowned by a semi-spherical dome. The plinth and terrace are square in plan, though the mausoleum itself is octagonal. A flight of steps is provided at the entrances on each side of the terrace. The interior consists of a big vaulted hall. Access is obtained to the mausoleum by a causeway.

Another remarkable monument of Sher Shah's period is the Qila-i-Kuhna Masjid. The beauty of the mosque lies chiefly in its facade divided into five arched bays. The mouldings are decorated with inlays.

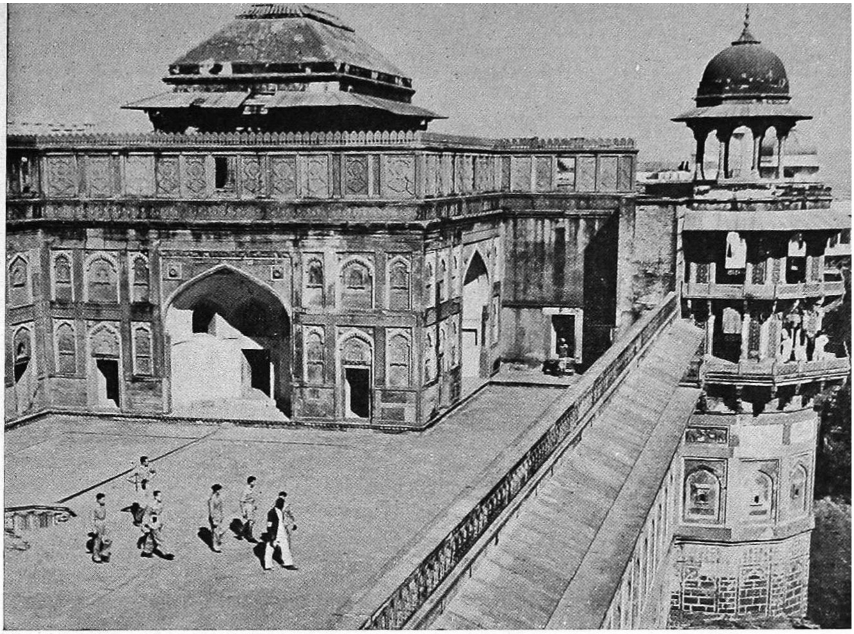
Akbar the Great gave a great impetus to building activity. Humayun's tomb at Delhi was built round about 1564 (Fig. 48). One of its attractive features is its situation in a large park-like enclosure. Its square plan on the terrace is recessed in the middle of each side. Each facade contains a doorway. The great dome is mounted on a high drum. The interior consists of a big hall with side chambers connected with one another by corridors and galleries.

After Humayun's tomb, however, the most important building projects of Akbar's period were the palace fortresses begun by Akbar at Agra (Fig. 49) and Lahore. The fort at Agra is distinguished by its magnificent walls in red stone entered by two gateways, of which the Hathi Pol is beautifully designed. Among the buildings erected inside may be



48
*Humayun's tomb, Delhi*

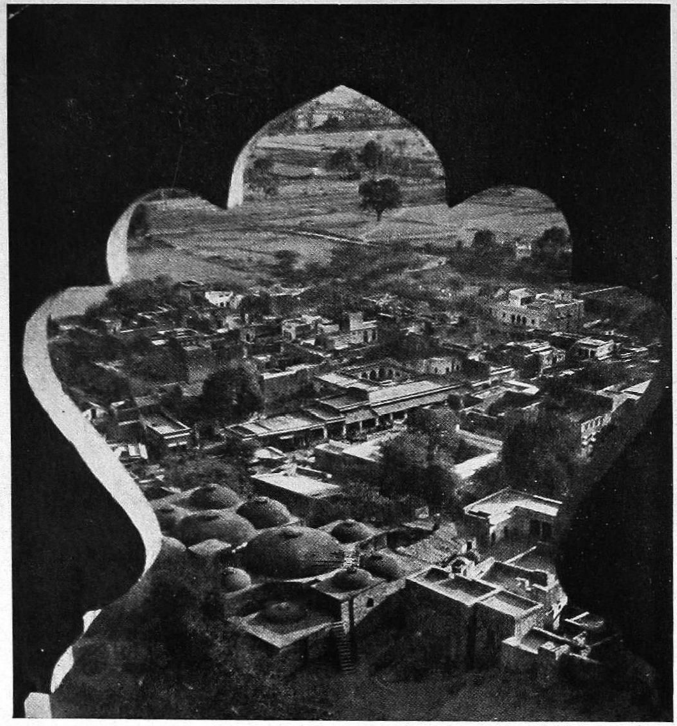
49
*Jahangiri Mahal, Agra Fort*



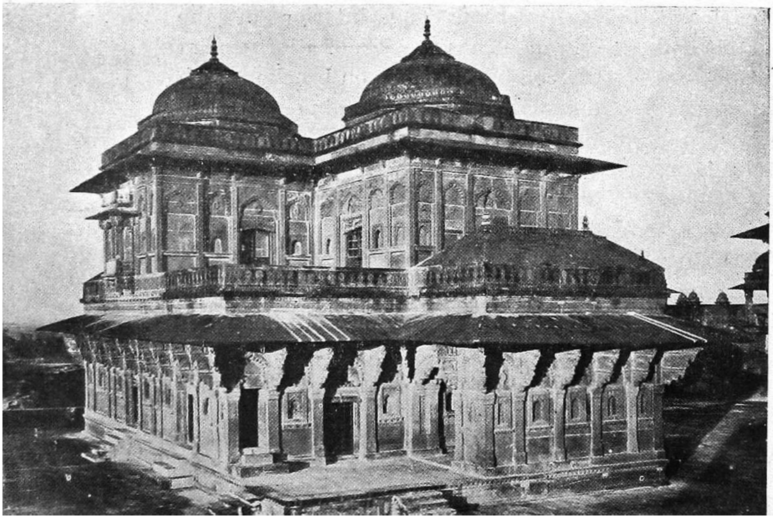
mentioned the Akbari Mahal and Jahangiri Mahal. Both the palaces are designed on the usual plan of a central square courtyard with ranges of double-storeyed rooms on each of the four sides. They are remarkable for their decoration.

The architecture of Fatehpur Sikri (Fig. 50), 26 miles from Agra, bears testimony to the genius of Akbar as a builder. The enclosing wall was very substantially built and provided with nine gates. One of the principal entrances is the Agra gate. Within the enclosure lies Jodh Bai's palace in which Hindu influence is clearly visible. Its double-storeyed rooms face inward on the quadrangle and it is provided with a handsome gateway and balconies. There is a double-storeyed pavilion known as Hawakhana, 'House of Winds'. The decorative elements have been copied from the architecture of Western India.

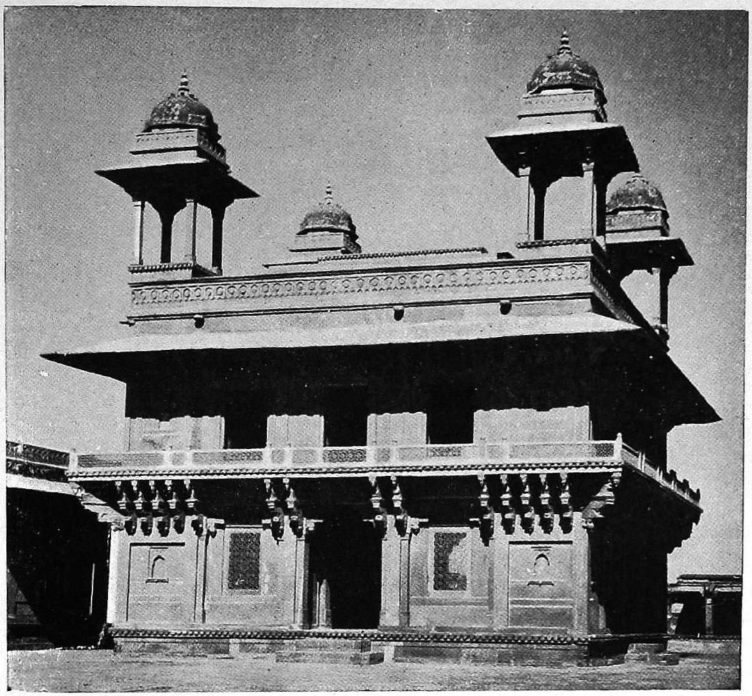
Among the buildings of Fatehpur Sikri, mention may also be made of Birbal's house (Fig. 51) and Diwan-i-Khas (Fig. 52). Birbal's house attracts our attention on account of the exuberance of its carved decoration, and the peculiar construction of its roof. The interior of the Diwan-i-Khas consists of a lofty room divided by a gallery on brackets with other narrow hanging galleries thrown diagonally from corner to corner. At the meeting point of the diagonal galleries, a circular platform has been inserted, the entire construction being supported on an immense cluster of brackets forming the capital of a column. In this wonderful hall, Akbar listened to the



50
*Akbar's Capital, Fatehpur Sikri*



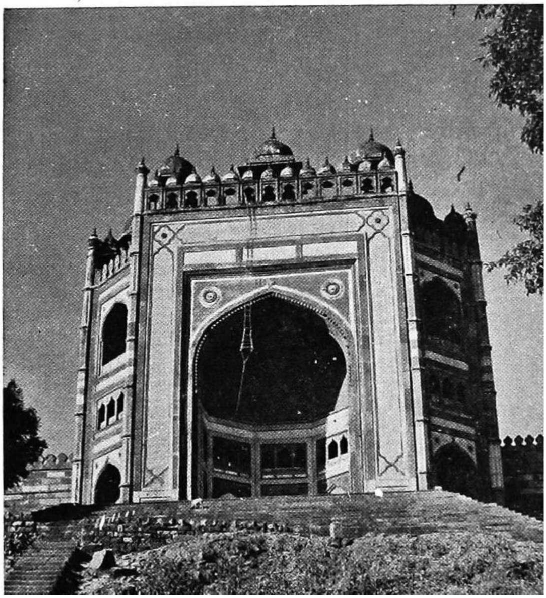
51
*Birbal's House, Fatehpur Sikri*



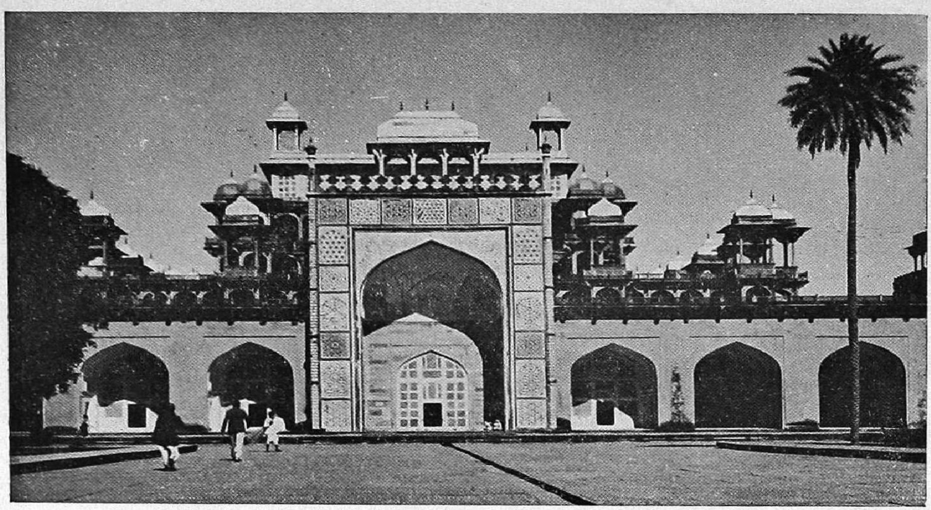
52 *Diwan-i-Khas, Fatehpur Sikri*

discourses of religious disputants from all over his empire.

The most imposing building at Sikri is the Jama Masjid. It is symmetrical in plan, the courtyard being entered by gateways on three sides. The sanctuary is a self-contained place of worship provided with a beautiful facade and a portico in the centre and arcaded wings extending across each side. Above the facade rise three domes. The finest feature of the mosque is, however, the Buland Darwaza (Fig. 53), distinguished by its imposing height, bold

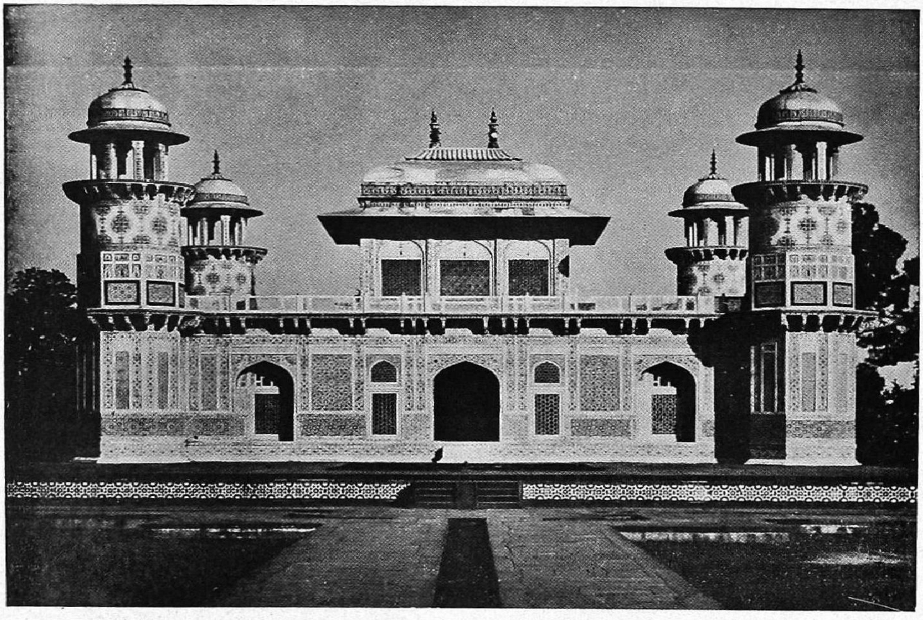


53 *Buland Darwaza, Fatehpur Sikri*



54 *Mausoleum of Akbar at Sikandra, Agra*

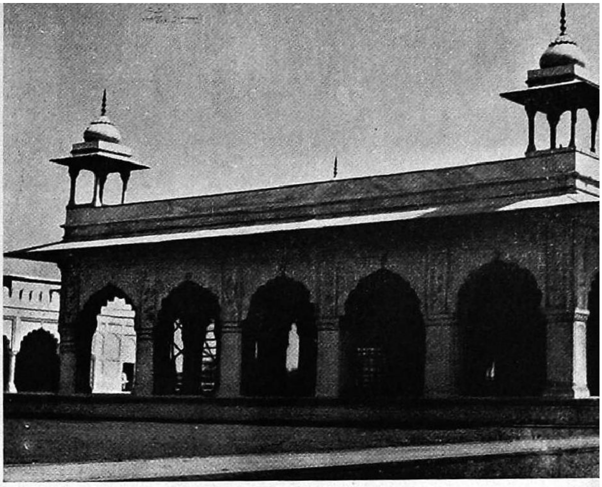
55 *The tomb of Itmad-ud-daulah, Agra*



projecting facade, while its other parts are of much smaller size with a doorway of normal proportions.

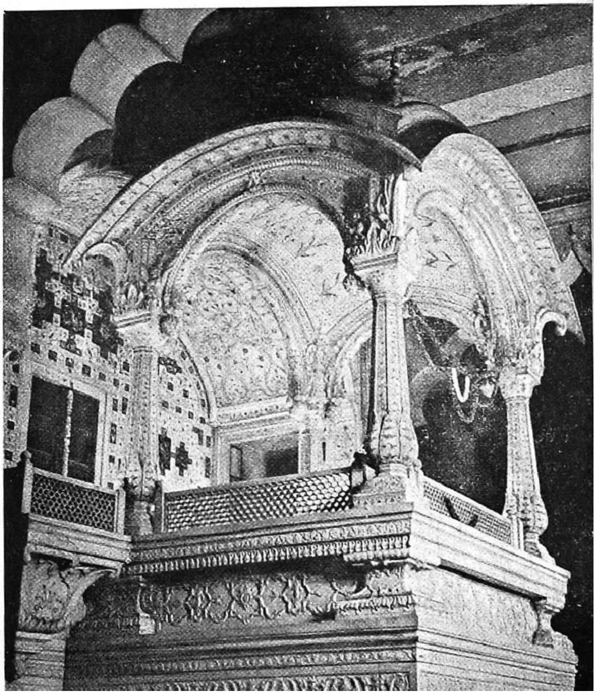
Jahangir was not a great builder, but he laid out several beautiful gardens, of which Shalimar Bagh near Srinagar in Kashmir may be mentioned. Among the famous monuments of his period, the tomb of Akbar at Sikandra near Agra is one (Fig. 54). The building is a huge structure consisting of five terraces diminishing as they ascend. Its final storey is remarkable for its fine finish Jahangir's tomb at Lahore is also an impressive building. The tomb of Itmad-ud-daulah (Fig. 55), father of Nurjahan, the famous consort of Jahangir, at Agra bears witness to the refined taste of the queen. There is no other building like it in the entire range of Mughal architecture and its distinguishing feature is its chaste decoration. The mausoleum is constructed in white marble which is beautifully decorated with inlay work. As a matter of fact, the decoration in this tomb is the harbinger of the symptuous marble pavilions and pietra dura work of Shah Jahan.

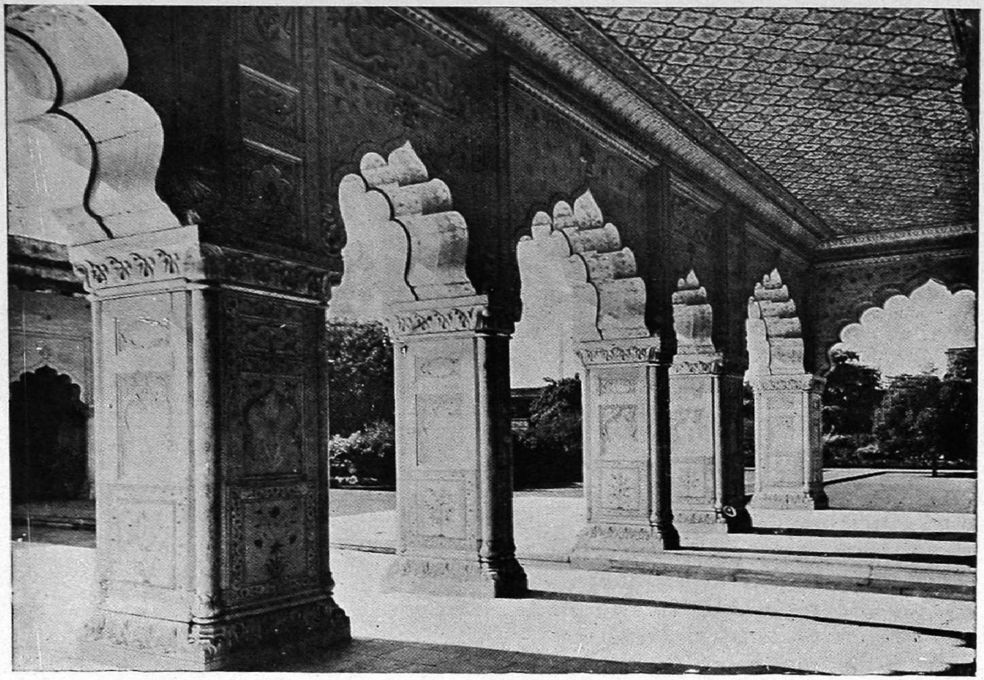
It may be said with justification that Shah Jahan found buildings in red stone and turned them into marble which was supplied in unlimited quantity by the quarries of Makrana in Rajputana. The choice of a new material gave a new sensibility to the building art and decoration and greater subtlety to pietra dura. Shah Jahan introduced a new feature in architecture in the shape of the cusped arch. He demolished structures north of the Jahangiri



56 *Diwan-i-Khas in the Red Fort, Delhi*

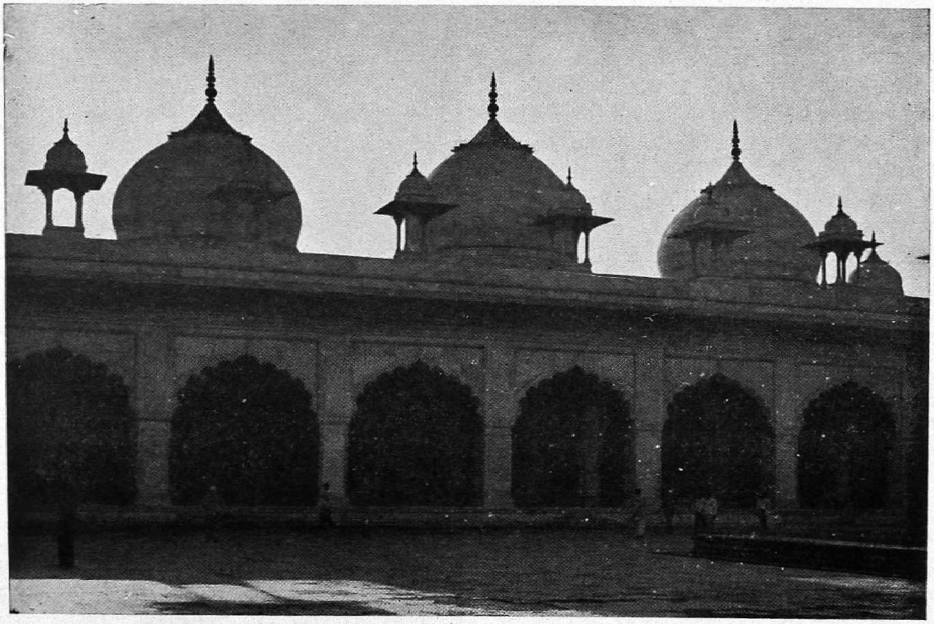
57 *The royal seat in Diwan-i-Am at Red Fort, Delhi*





58 *Marble arches in Diwan-i-Khas, Red Fort, Delhi*

59 *Moti Masjid, Agra*

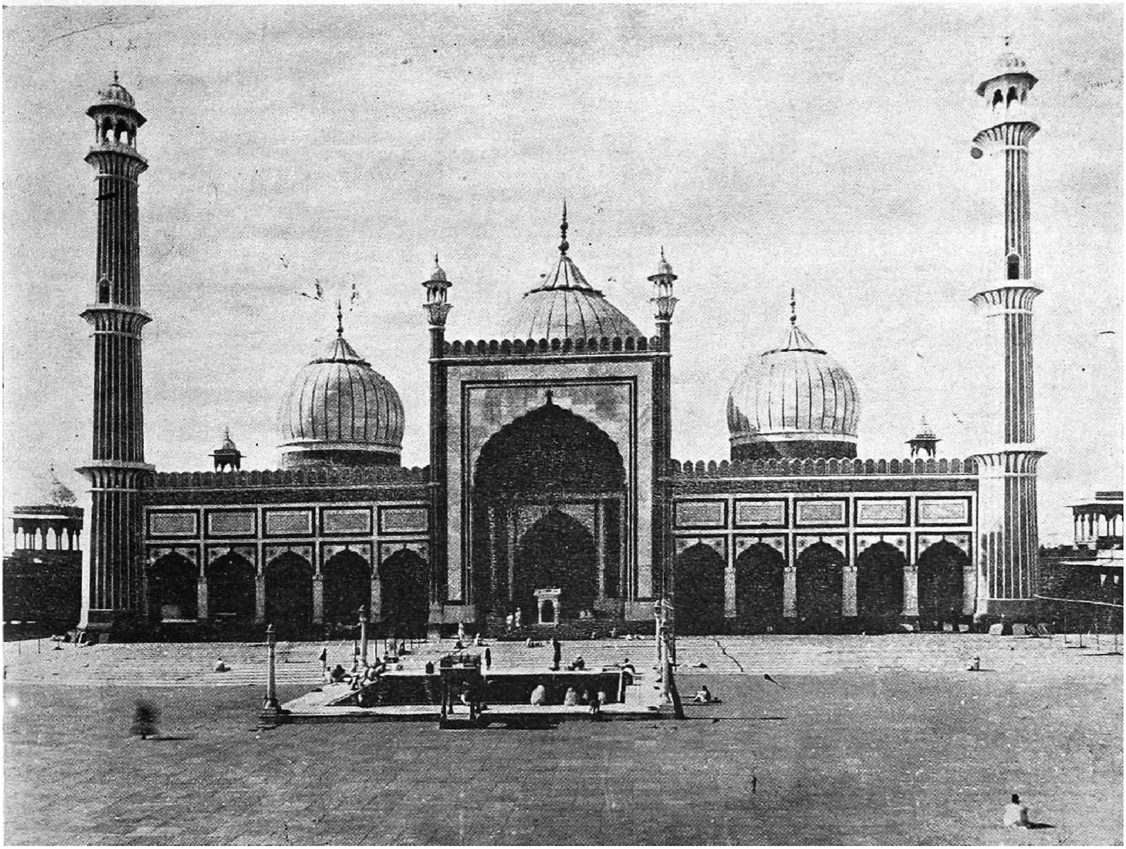


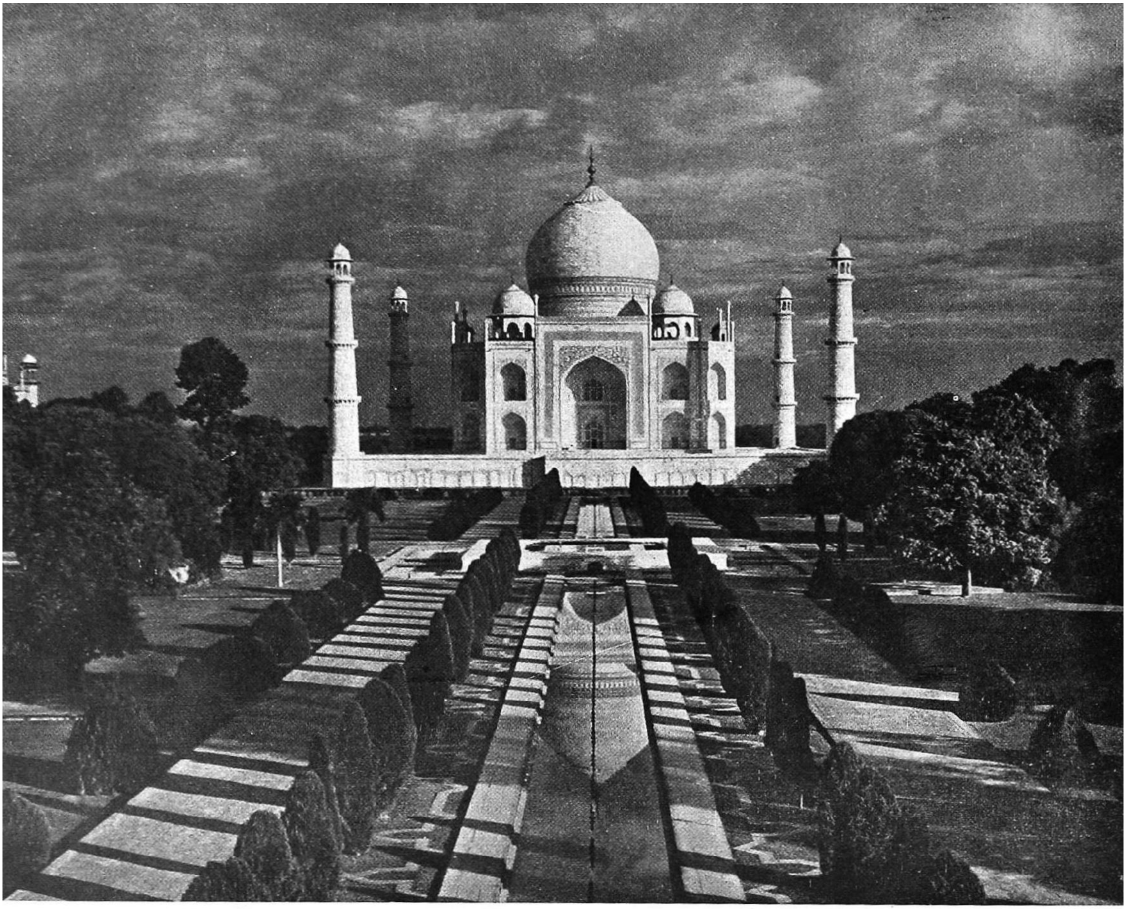
Mahal in Agra Fort and their place was taken by such magnificent edifices as the Diwan-i-Am, Diwan-i-Khas, Moti Masjid, etc. What could be more noble than the Hall of the Diwan-i-Khas with its double rows of columns. The Moti Masjid (Fig. 59) erected in 1654 with the flawless quality of its material and the noble disposition of its architectural elements at once attracts our attention.

In his great enthusiasm for building activities Shah Jahan decided to build a new city at Delhi. The citadel (Red Fort) consisted of three entrances, barracks for the guards, accommodation for those attached to the court, darbar halls, royal store-rooms, kitchens, stables, etc. The royal residence is the most magnificent of all, its plan being arranged in rectangles and squares. All the palaces were provided with beautiful gardens and with separate pavilions divided into bays with massive pillars, their roofs supported by foliated arches (Fig. 58). All interior surfaces are decorated either with inlay, low relief carvings or patterns in colour and gold. Water was brought to the fort by a canal from the Yamuna and from there diverted into the fountains.

The famous Jama Masjid at Delhi

60 *Jama Masjid, Delhi*





61 *Taj Mahal, Agra*

was begun in 1644 and completed in 1658 (Fig. 60). It is distinguished by its dignified and impressive appearance. Its imposing gates with an endless flight of steps and domes are nobly disposed. The Jama Masjid built at Agra in the same period follows the plan of its counterpart at Delhi, with its rippling succession of kiosks, which give a noble aspect to this building.

The Taj Mahal (Fig. 61) has been rightly described as one of the finest monuments ever raised to honour the memory of the dead. The royal consort Mumtaz Mahal, during her lifetime, lived in the Khas Mahal, one of the noblest buildings of the time and even after her death she reposed in a memorial of matchless beauty. Truly, this mausoleum is an everlasting tribute to the genius of

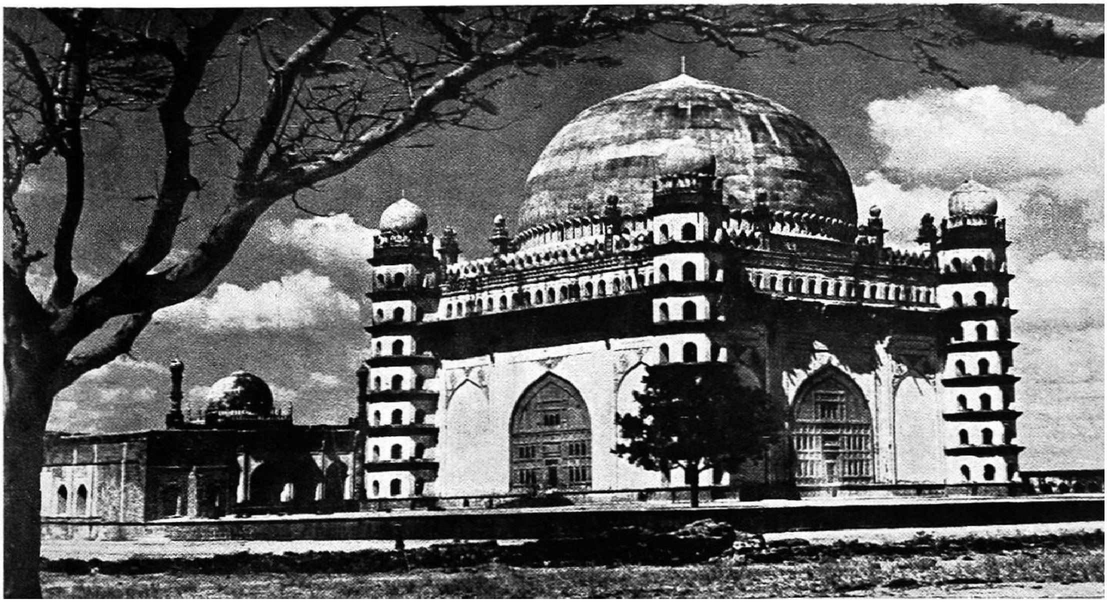
its builder and the aesthetic sense of the emperor.

Carvers and decorators from all parts of India were summoned, and calligraphists, decorators and builders from Baghdad, Bukhara, Shiraz and Samarkand were invited for building the Taj Mahal. Before the actual construction was undertaken, every detail was worked out and a beautiful site was selected and the plan for the garden laid. At the northern end of the enclosure is a wide terrace with the mausoleum in the centre and a mosque and another building on either side to balance the design. The mausoleum rises almost abruptly from the high marble terrace. The plan is square and its elevation is divided into two parts of approximately equal height. Its crowning glory is the great dome. Its interior has a crypt below and a vaulted tomb-chamber above. As regards the decoration outside, the principal embellishment is obtained by arabesques in pietra dura scroll-work, diapers, sprays of lilies and other floral forms. There is little doubt that both man and nature have combined to give a thing of supreme beauty to posterity.

Aurangzeb also added a few pretentious buildings, but compared with their predecessors they are decidedly of inferior workmanship. The mausoleum of the wife of Aurangzeb at Aurangabad is an inferior copy of the Taj Mahal.

Different in character from the architecture of the Mughals, a distinct architectural style prevailed at Bijapur. This independent style owes its existence to the Adil Shahi dynasty of Bijapur. Claiming Turkish origin, the Adil Shahis introduced a new foreign element into local architecture with success. The famous Gol Gumbaz (Fig. 62), tomb of Muhammad Adil Shah (1627-58), is an immense mausoleum. The tomb encloses a chamber of vast size and

62 *Gol Gumbaz, Bijapur*



noble proportions and its most outstanding features are octagonal turrets and the ponderous bracketed cornice below the parapet. The arrangement of the arches is also ingenious. The sombre beauty of the Gol Gumbaz, however, contrasts with Mihtar Mahal which forms a gateway to the mosque. Its projecting balcony window arrests our attention.

Reverting to an earlier period, Ibrahim Rauza is a beautiful monument and it contains the tomb of Ibrahim Adil Shah II and a mosque. Both are arcaded edifices with wide caves on carved brackets and ornamental minarets and each is surmounted with a bulbous dome. Their carved decoration is clearly the outcome of the fertile imagination of the craftsmen of Bijapur.

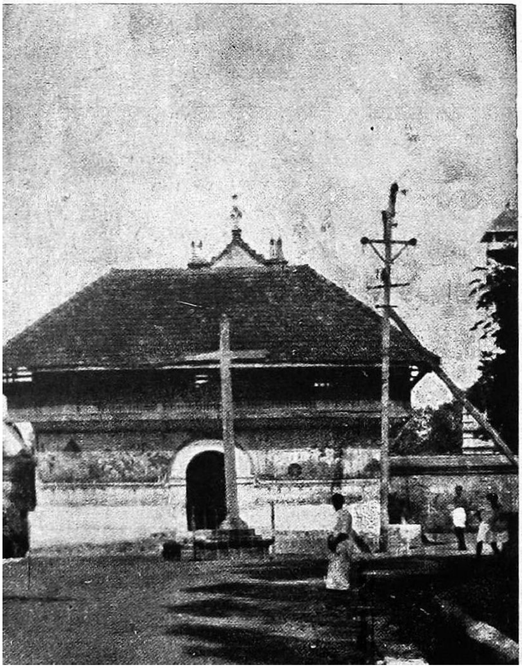
III

Like the Hindu temple and Muslim mosque, the church in India has also its characteristic architecture.

Early Indian churches were designed after Hindu temples which naturally provided models for church-building.

The Syrians who migrated to Kerala in the 4th century brought with them their Western Asian traditions of church architecture. Churches with regular chancel and nave began to be built. Kerala evolved a distinctive style of church-building.

Churches in Kerala were characterised by the ornamented gable facade at the nave surmounted by a cross and a porch or hall in front. Some of these churches have the Kottupura or musical hall over the main gateway. The Syrians adopted for the church this feature from the Hindu temples in Kerala. An open-air cross in frnot of the main entrance

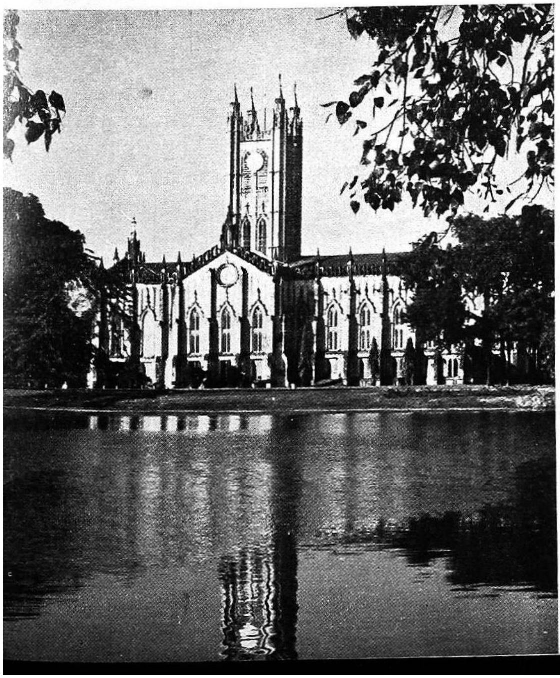


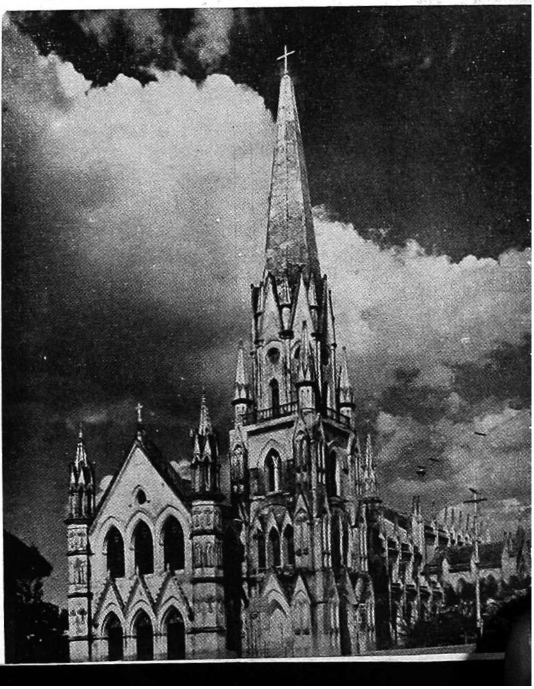
63 *Ancient gateway of the Kanjur (Kerala) Church*

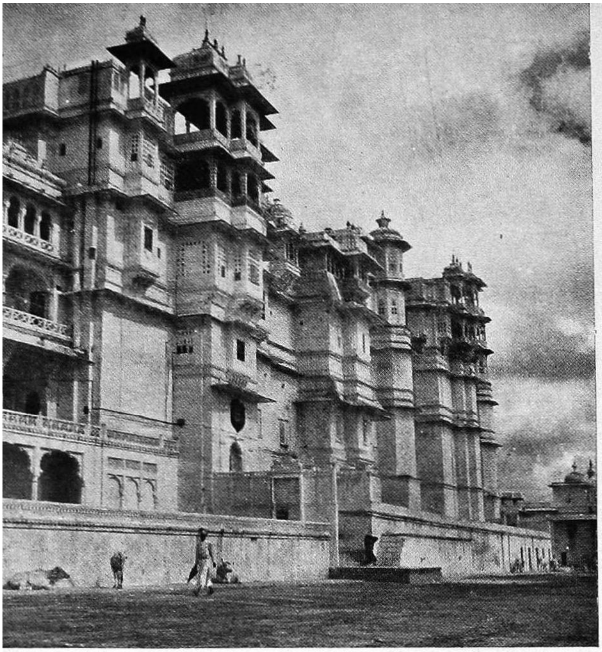
64 *Church of Bom Jesus, Old Goa*

65 *St. Paul's Cathedral, Calcutta*

66 *St. Thomas Cathedral Basilica, Mylapore, Madras*







67
*The Maharana's Palace, Udaipur*

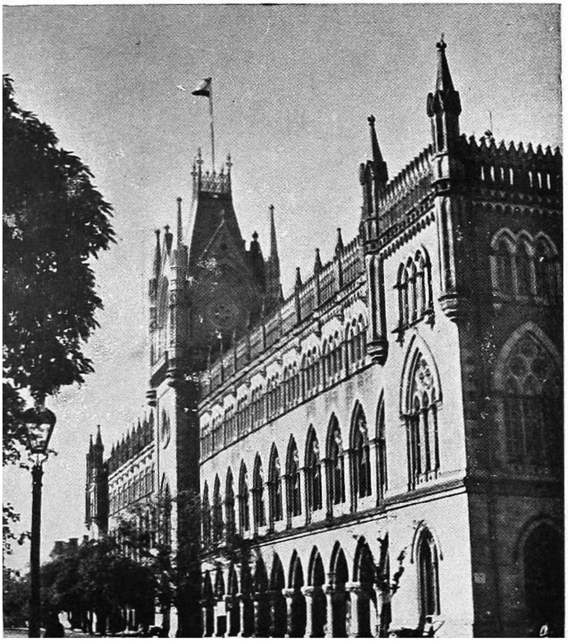
is another adaptation from the Hindu temple style (Fig. 63).

European styles in church architecture were first introduced into India by the Portuguese who built great churches in Goa. The Bom Jesus Church in Old Goa in which the body of St. Francis Xavier is enshrined is a celebrated example (Fig. 64).

The Anglicans among the Protestants chose the great European traditions in church architecture and their churches are generally the bigger and more ornate. They built many cathedrals during the British rule. St. Paul's at Calcutta is the most important (Figs. 65-66).

The modern Dornakal Cathedral of the Church of South India in Andhra Pradesh and the Christu Kula Ashram Chapel at Tirupattur in North Arcot, Madras State are notable examples of the new trend in church-building.

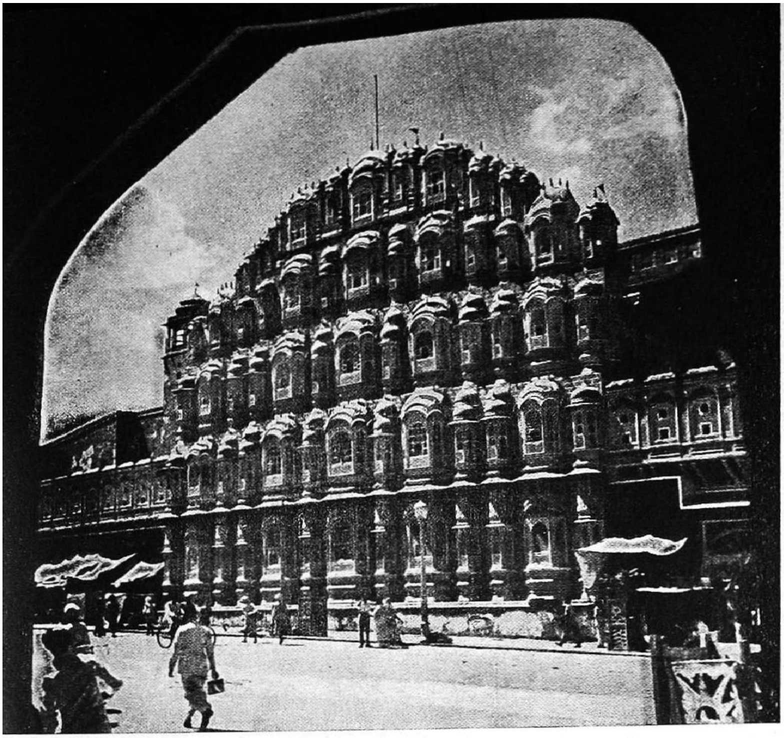
68 *The High Court, Calcutta*



IV

The development of Indian architecture in mediaeval India was governed by a number of factors—the existence of a rich architectural tradition, patronage of ruling dynasties, and security of life and prosperity in the country. The rulers, indeed, were keenly alive to the possibilities of new architectural forms with their stress on functional and decorative elements which changed with new cultural trends (Fig. 67). The richer classes, such as the merchants and officials, could also afford to spend their wealth on the building of temples, mosques, residential houses and gardens.

If we carefully examine the politi-



69
*Hawa Mahal, Jaipur*

cal and economic conditions of the 18th and 19th centuries, we find that the conditions of life were not favourable to the growth of architecture. In spite of various difficulties, the architectural tradition maintained itself, but with the disappearance of Mughal power in Delhi, the centre of building activity shifted to the provincial capitals and the princely states. Henceforth, it received patronage from the Rajput princes who built some beautiful palaces. The famous Nawabs of Oudh built many mausoleums, but architecturally they are not of much merit.

The advent of the British, however, brought to an end the patronage of architecture by the State. It was expected, as in other periods of Indian history, that the impact of European architecture would result in a synthesis bringing new meaning and function to decadent architectural forms. But the English were busy with other things which left them little time to preserve and enrich the artistic heritage of this country. The architecture of the East India Company days, as exemplified by the 18th and 19th century buildings in Calcutta, is merely a copy of the architectural forms then in vogue in London with a bias for ancient, Classical and Gothic motifs (Fig. 68). This new architecture fostered by the State, although foreign to the genius of the Indian people, soon became popular and some of its features, such as high

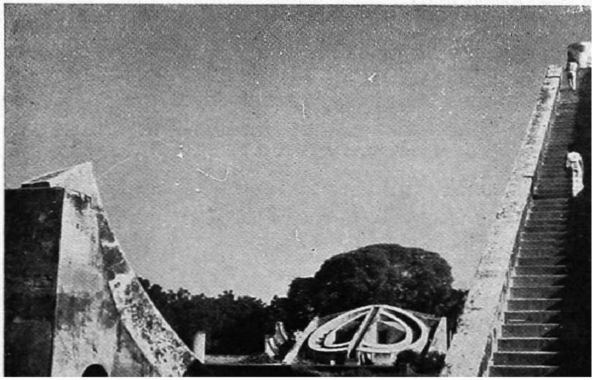
columns, pediment and tympanum, were accepted in public buildings.

Indian architecture of the 18th century, while preserving and fostering the Mughal tradition, reflects a decadence apparent in heavy decoration, confused planning and the use of bad material. None the less, even in this age of decadence, Sawai Jai Singh laid the foundations of the carefully planned city of Jaipur in 1728. Although he did not actually draw the plan for the city, he consulted the plans of many European cities as well as the *Silpasastras*. It is because of him that Jaipur is the only *planned* city of that period, others being mainly a haphazard growth of houses built along narrow lanes.

The plan of the city is a rectangle adapted to the terrain. The length of the rectangle is laid approximately on an east to west axis and is divided by four main roads running north to south. Its width is divided by four main roads running east to west. The squares at the crossings of the main roads and the north to south transverse roads serve the purpose of traffic control. The main streets terminate at the eight gateways in the city wall. The blocks formed by the grid pattern of the streets constitute the precincts which are more or less self-sufficient units. These precincts are sub-divided into smaller blocks by narrow streets which generally follow the grid pattern. The central courtyard is a distinguishing feature of the houses. In order to ensure privacy and protection against the inclemencies of the weather, the windows are small. Through a screen one may look down into the street without being seen (Fig. 69). The dullness of the facade with its small openings is relieved by colour and texture. Stones of many hues provide the necessary colour and stone slabs carved into lattice screens and framed into balconies, supported on cantilevered balconies, the texture. Further variations are supplied by the use of fine plastered panels either coloured uniformly or patterned.

The builders of Jaipur were not conservative and they freely borrowed architectural motifs from Delhi, Agra and even Bengal. The result was a pleasing architectural design in consonance with Indian tradition and yet reflecting the genius of a scientific planner. It is also worth remembering that the astronomical instruments built by Jai Singh for the observatories at Delhi (Fig. 70), Jaipur, Varanasi and Ujjain, are, besides serving a purely scientific purpose, noted for their beauty. "Built purely for a functional purpose without decoration, these structures prove the beauty inherent in abstract sculpture and

70
*Jantar Mantar, New Delhi*



provide an example of how abstract structures built to a suitable scale and in a proper setting can create a beautiful and inspiring spectacle." The example set by the architects of Jaipur was, however, shortlived as the later additions to the city show. Between the middle of the 18th and the 19th centuries, the Ghats of Varanasi were built and they offer a unique sight for visitors (Fig. 71).

The 19th century buildings of Delhi, Agra, Lucknow, Varanasi and other places reveal a hybrid tendency in which indigenous traditions are curiously mixed with foreign ones. This was due to the indiscriminate adoption of certain architectural features from contemporary European buildings by artisans who had little knowledge of the principles of architecture. The result was that while old forms still lingered, the new ones could hardly be called examples of modern Indian architecture.

## V

At the beginning of this century, in the wake of the Swadeshi movement, there arose a demand for a national style of architecture. This was met by the British with an effort to 'orientalize' the construction of some of the public buildings. The Victoria Memorial Hall (Fig. 72) in Calcutta has only certain superficial Indian features and the General Post Office and the Prince of Wales Museum in Bombay are the prototypes of Gol Gumbaz in Bijapur. Many of the colleges, schools and hospitals were planned and executed in the so-called Indian style. No attempt was, however, made to study the problems involved in starting a school of modern architecture in India. The engineers and architects had at their disposal only hastily prepared *architectural designs* of columns, arches, windows, doors, brackets, etc., which were labelled Indian and used indiscriminately. When such a costly project as the construction of the Banaras Hindu University was undertaken, nobody cared for its architectural effectiveness. A curious mixture of mediaeval temple columns, spires and the late trellis-work of Jaipur was labelled Indian.

In this period of enthusiasm, nobody raised a voice against this sham classicism which could never recapture the spirit of bygone days. The problem before the architects of the early years of this century was how to modernize the traditional Indian architectural concepts to make them suit modern conditions and building materials. Mere revivalism, without inspiration, was doomed to fail.

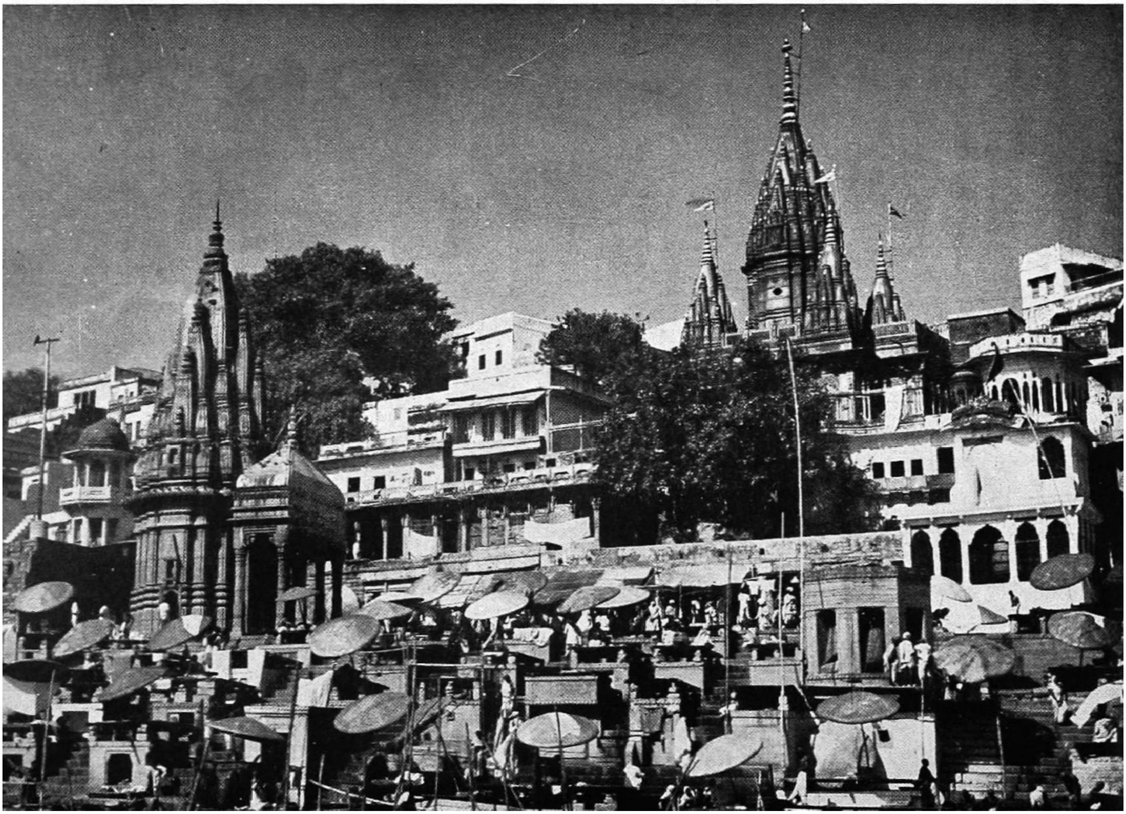
The building of New Delhi afforded an opportunity for laying the foundations of a modern school of Indian architecture. The experiment, unfortunately, cannot be said to have been successful. The architects of New Delhi claimed to have brought about a synthesis of the various periods of Indian architecture (Fig. 73). But profession is one thing and

practice another. This has resulted in a heavy architecture where simplicity has been sacrificed on the altar of the grandiose. It may have satisfied the vanity of the rulers, but does not do justice to the artistic heritage of this country.

We have already pointed out that the architectural tradition of India is fast disappearing and that no new school has emerged so far. Now the question is: what should be the choice of the architects and the public with regard to the form and design of modern Indian architecture ? This is obviously a question for which both architects and the people have to find answer.

There is no doubt that modern Indian architecture should be an expression of the national spirit, for in all periods of Indian history architecture has reflected the spiritual and material attainments of the people. But the old values are no longer valid. We are living in an age of sweeping changes. The country is being rapidly industrialized and there is a craving for scientific progress. The signs of these rapid changes are

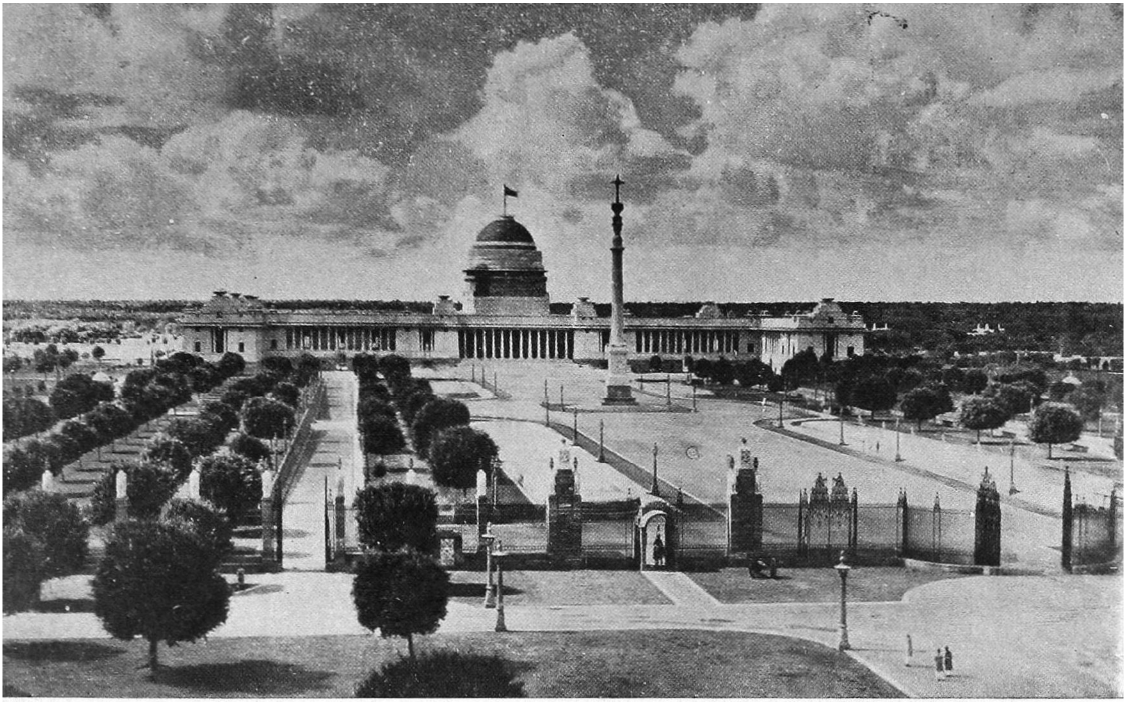
71 *The Ghats of Varanasi*



72 *Victoria Memorial, Calcutta*

evident everywhere. Architecture no longer depends on the handicrafts for its building materials, for these are being replaced by steel frames and cement and concrete.

Based on handicrafts, Indian architecture flourished for more than four thousand years and assimilated foreign influences in its own way. It had, however, to give way to western architecture which came with the British. This end was perhaps inevitable, only the British hastened the process of disintegration. But it must be admitted that this disruption created, in course of time, a demand for a national style of architecture. One school of thought thus insists on the continuity of tradition, and considering the architectural heritage of the country they may be right. But unfortunately this point of view, as we have said before, has led to meaningless imitations of old forms in wholly new materials. This has resulted in an unprogressive architecture, as no copy howsoever great can vie with the original; it is bound to be a caricature. The second school of thought relies on the modern art movement and takes it for granted that it has come to stay in this country. Though modern architecture may not satisfy all the conditions for

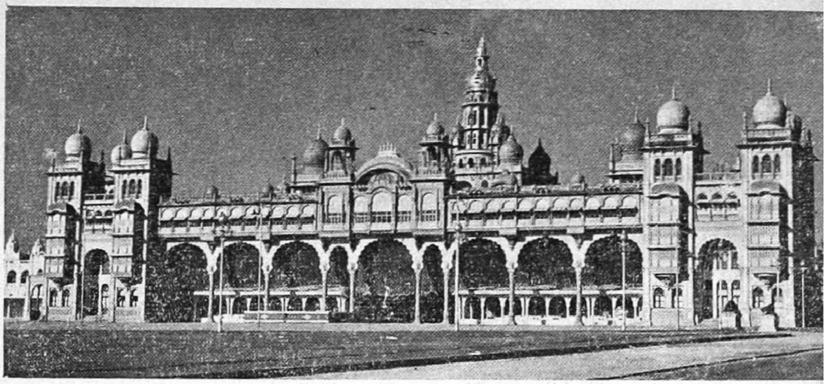


73 *Rashtrapati Bhavan, New Delhi*

a modern school of Indian architecture there is no question of breaking away from it.

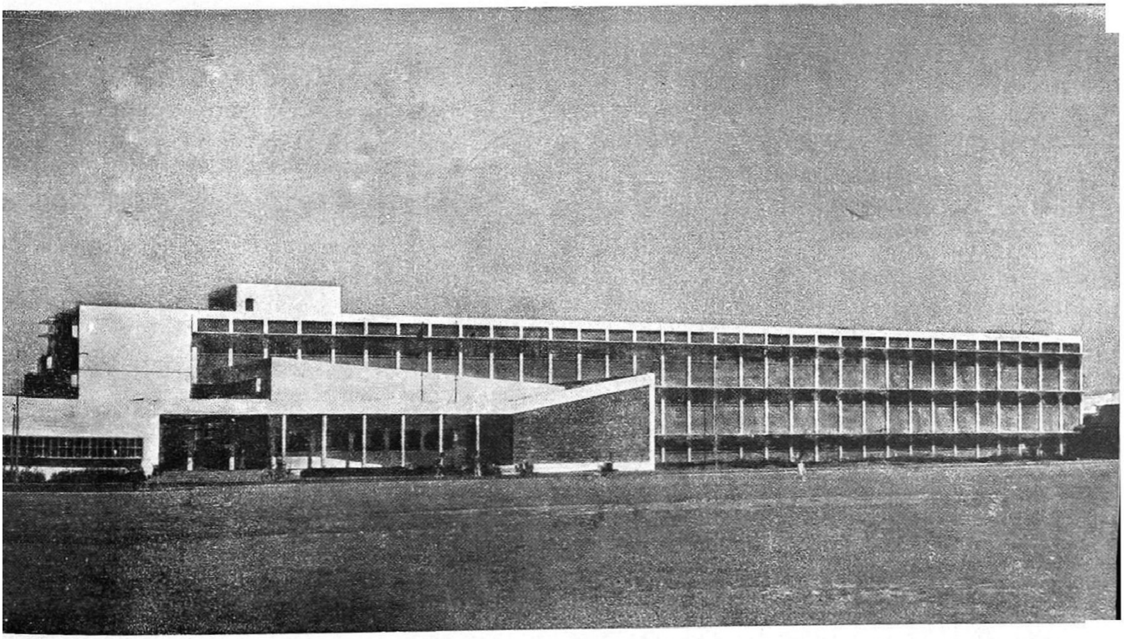
The modern Indian architect, however, must bear in mind that there are certain elements in ancient architecture which can be adopted for contemporary use. Free columns, screens, walls independent of columns, flat roofs, etc., are some features which can be used to great effect even today. He can also make effective use of simple rural styles. Intricate decorative patterns and figure sculptures cannot hope to find a place in modern Indian architecture as the materials used are hardly suitable.

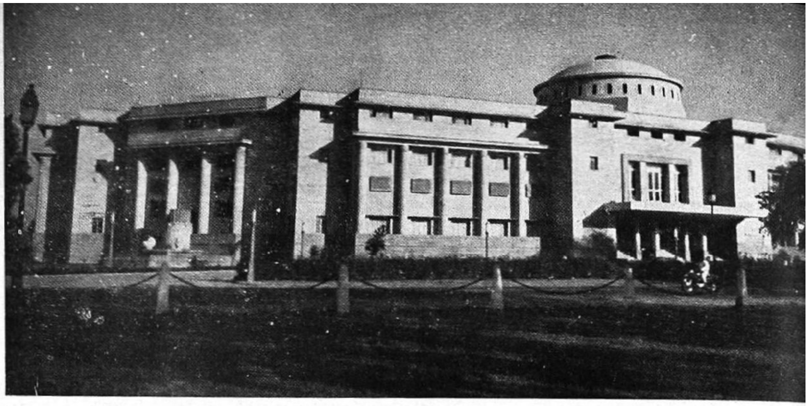
The acceptance of the above principles would help in laying the foundations of a simple, honest and straightforward style, reflecting the life and achievement of the people. Owing to its limitations, however, it will not be able to achieve the grandiose effect of mediaeval architecture which was so closely associated with the pomp and splendour of the aristocracy of the day. The planning and construction of Chandigarh by Le Corbusier combines utility with tradition.



74 *The Palace, Mysore*

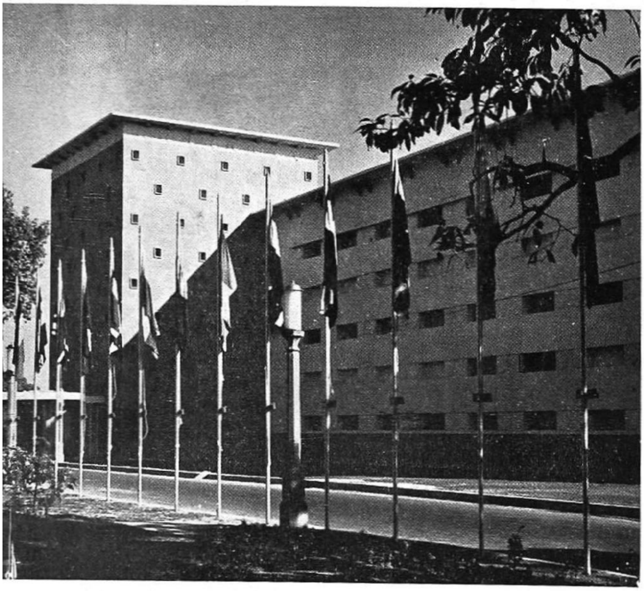
75 *Engineering College, Chandigarh*





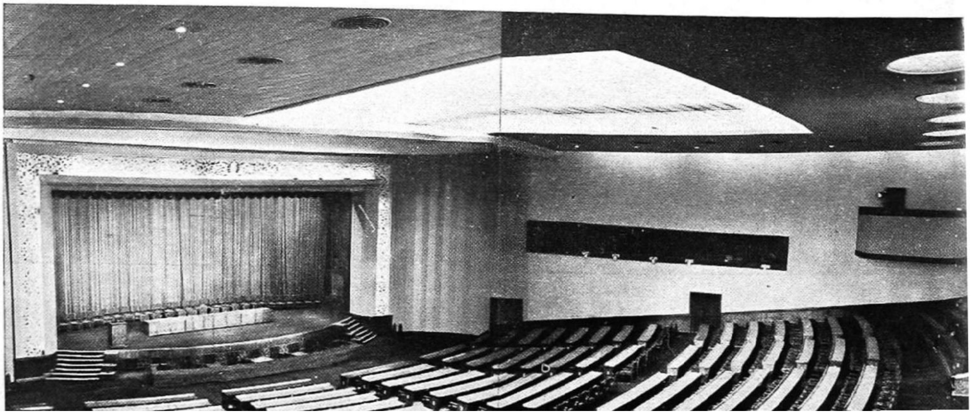
76 *National Museum, New Delhi*

77 *Vigyan Bhavan, New Delhi*



Scarcity and enormous cost of land and rapid increase in population are some of the factors which have created the need for mulit-storeyed buildings and skyscrapers in cities. during the last decade and a half, a number of tall edifices have sprung up. This has been made possible by a number of new building materials and building techniques which have evolved and influenced architectural expression. Today structural systems can exercise control over space. Huge voids can be spanned and vertical space can be enclosed to any height. The Government of India has responsible for a large part of this building activity.

78 *Main Conference Hall, Vigyan Bhavan*



79 *Tata Memorial Cancer Hospital, Bombay*

80 *Vidhan Soudha, Bangalore*

81 *Asoka Hotel, New Delhi*

82 *Shanmukhananda Sabha Hall, Bombay*

83 *New Secretariat, Calcutta*

A distinguishing feature of contemporary architecture for public buildings is simplification of design for economy in cost and speed in construction. Plain facades with little or no ornamentation and functional interiors no doubt conform to the latest architectural trends in the world. Contemporary architecture in India has tended to become international, though there appears to be a general awareness of climatic and social conditions (Figs. 75-83).

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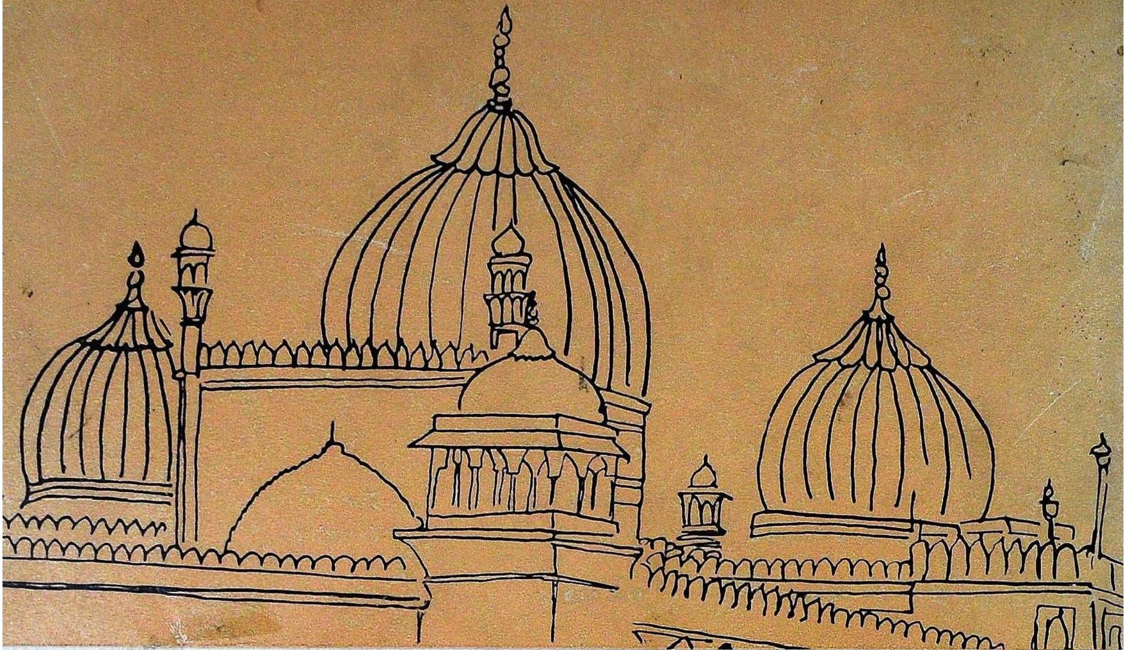
*CORRECTION*

| | *Read* | *For* |
|---|---|---|
| Page 19, column 2, line 1 | Veritable | Vertiable |
| Page 30, column 2, line 13 | cubicles | cubicals |
| Page 37, line 29 | sumptuous | symptuous |
| Page 42, column 2, last line | front | frnot |
| Page 52, line 5 | multi-storeyed | mulit-storeyed |
| Page 52, line 7 | During | during |
| Page 52, line 20 | has been responsible | has responsible |



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